University of Kent

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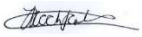
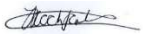
Signature				
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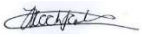
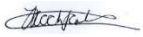
Signature				
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CONTENTS

TABLES

FIGURES

APPENDICES

GLOSSARY

APPENDIX B

RELEVANT LEGISLATION AND PLANNING POLICY

APPENDIX C

IAQM CONSTRUCTION IMPACT ASSESSMENT METHODOLOGY

APPENDIX D

CRITICAL LEVELS AND CRITICAL LOADS

APPENDIX E

TRAFFIC DATA

APPENDIX F

MODEL VERIFICATION

APPENDIX G

WIND ROSE

APPENDIX H

MODEL RESULTS

1. INTRODUCTION

1.1.1. WSP has been commissioned by University of Kent to carry out an assessment of the potential air quality impacts arising from the Proposed Development situated on land currently owned by the University of Kent, hereafter referred to as the 'Proposed Development' or 'Site'. The Site comprises of three development parcels (Sites B, C and D) which have been considered within a single Masterplan for development. The Site is located on farmland to the north of the main university campus, between the villages of Blean and Tyler Hill, and comprises an area of 230.37 ha.

1.1.2. The current emerging masterplan is for a new residential-led community comprising circa 2,000 dwellings and associated uses. The information presented within this report will be used to promote the Site as a proposed allocation within Canterbury City Council's (CCC's) emerging Local Plan.

1.1.3. This report presents the findings of the air quality assessment undertaken to assess the likely effects of changes in air quality on nearby designated ecological sites (including nearby Ancient Woodlands and Blean Complex Special Area of Conservation (SAC)), during both the construction and operation of the Proposed Development. Notably, consideration has been given to the effects of both the proposed Access Strategy and traffic associated with the Proposed Development, once operational.

1.1.4. Whilst a Habitats Regulations Assessment (HRA) will be undertaken to inform the evidence base for the emerging Local Plan, which will include traffic contributions from the Site as a potential strategic allocation, this will consider potential effects on Habitats Sites only. Whereas the assessment presented herein:

- Includes consideration of air quality effects on all designated ecological sites (not just Habitats Sites); and
- Allows consideration of the likely effects of the Proposed Development 'alone' as well as 'in-combination' with other Plans and Projects.

1.1.5. A glossary of terms used in this report is provided in Appendix A.

2. SCOPE OF THE ASSESSMENT

2.1. SCOPE OF THE ASSESSMENT

2.1.1. There is the potential for effects on nearby designated ecological sites[1] to occur during both the construction and operational phases of the Proposed Development. These comprise:

- The effects of dust and particulate matter due to construction activities (including the construction of the site access road);
- Emissions to air (namely nitrogen oxide (NO_X) and particulate matter) from traffic associated with the construction phase of the Proposed Development; and
- Changes in air quality due to:
  - Traffic associated with future occupants/users of the Proposed Development; and
  - The redistribution of traffic on the local road network which may occur as a result of the proposed Access Strategy/changes to the capacity of nearby roads due to the operation of the Proposed Development.

2.1.2. These potential effects are discussed further in Section 2.2 below.

2.2. POTENTIAL EFFECTS

INCREASED DUST DEPOSITION

2.2.1. Increased dust deposition can affect designated ecological sites in one of two ways:

- Direct impacts on vegetation or aquatic ecosystems; and/or
- Indirect impacts on fauna (e.g. on foraging habitat).

2.2.2. The Institute of Air Quality Management's (IAQM's) guidance on the assessment of dust from demolition and construction[2] describes some of the potential effects of dust from demolition and construction sites on vegetation. Namely:

"Dust from demolition and construction sites deposited on vegetation may create ecological stress within the local plant community. During long dry periods dust can coat plant foliage adversely affecting photosynthesis and other biological functions. Rainfall removes the deposited dust from foliage and can rapidly leach chemicals into the soil. Plant communities near short-term works are likely to recover within a year of the dust soiling stress ceasing. However, large scale construction sites may give rise to dust deposition over an extended period of time and adversely affect vascular plants. For example cement dust deposited on leaves can increase the surface alkalinity, which in

[1] Ramsar site, Special Area of Conservation (SAC), Special Protection Area (SPA), Site of Special Scientific Interest (SSSI) , Areas of Special Scientific Interest (ASSI), Local Wildlife Site (LWS), Local Nature Conservation Site (LNCS), Site of Importance for Nature Conservation (SINC), Area in the Ancient Woodland Inventory (AWI), National Nature Reserves (NNR), Local Nature Reserves (LNR) and Ancient Woodland (AW).

[2] Institute of Air Quality Management (Version 1.1 Updated June 2016). *Guidance on the Assessment of Dust from Demolition and Construction*

turn can hydrolyse lipid and wax components, penetrate the cuticle, and denature proteins, finally causing the leaf to wilt.

Limestone dust coating of lichen has been shown to damage its photosynthetic apparatus. These types of damage over a long period have the potential to change plant community structure and function. Noticeable effects include the increase in ruderal and pioneer plant communities."

2.2.3. The sensitivity of a particular site to increased dust deposition will depend on its reason for designation. Specialist ecological advice should be sought to determine the sensitivity of the ecological receptors to dust impacts. The requirement for this is considered in Sections 5 and 6.

CHANGES IN POLLUTANT CONCENTRATIONS IN RELATION TO THE CRITICAL LOAD AND LEVELS

2.2.4. Guidance published by the Institute of Air Quality Management (IAQM) specifies that there are two categories of pollutants that can impact upon designated ecological sites. These are:

- Pollutants that have an effect on vegetation/habitats in a gaseous form (namely NO_X and ammonia (NH_3) concentrations); and
- Those which have an effect through deposition (nitrogen (N) and acid deposition).

2.2.5. Changes in NO_X and NH_3 concentrations are assessed in relation to the relevant Critical Levels. Critical Levels are used to estimate the exposure of sensitive vegetation and ecosystems to some important airborne pollutants, below which significant harmful effects are not expected to occur. They are not habitat specific, as with Critical Loads, but have been set to cover broad vegetation types. These levels have been adopted by the European Union and the United Nations Economic Commissions for Europe (UNECE) and are used as regulatory standards.

2.2.6. The Critical Level for NO_x is a concentration of 30µg/m^3, measured as an annual mean. The Critical Level for ammonia (NH_3) for higher plants (including heathland, grassland and forest ground flora) is 3µg/m^3. There is also a lower Critical Level for NH_3 of 1ug/m^3 which applies only where lichens and bryophytes are present.

2.2.7. In addition to the direct effect of pollutant concentrations in the air, vegetation can also be affected by the deposition of pollutants and particles onto both the ground and vegetation. Close to roads, nitrogen deposition can be of concern for sensitive ecological sites as it can result in a variety of adverse effects depending on the habitats present (e.g., interfering with photosynthesis, increasing acidification, altering species composition etc).

2.2.8. When considering the effects of nitrogen deposition from the air onto habitats and vegetation, the relevant assessment benchmarks are known as 'Critical Loads'. Critical Loads are defined as: *"…a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge".* Critical Loads have been established for a wide range of habitat and vegetation types, reflecting the variation in ecosystem responses.

2.2.9. The Critical Levels and Loads applied to this assessment are detailed within Section 3.6.

2.3. RELEVANT LEGISLATION AND PLANNING POLICY

2.3.1. Relevant legislation and planning policy is listed below. Further detail can be found within Appendix B.

RELEVANT LEGISLATION

- Air Quality Strategy for England, Scotland, Wales and Northern Ireland (AQS)[3];
- The Air Quality (England) Regulations 2000[4];
- The Air Quality (England) (Amendment) Regulations 2002[5];
- The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020[6];
- The Air Quality Standards Regulations 2010[7];
- The Air Quality Standards (Amendment) Regulations 2016[8];
- The Environment Act 2021[9]; and
- The Habitats Regulations[10].

PLANNING POLICY

- The Government's National Planning Policy Framework[11]; and
- The Government's Clean Air Strategy 2019[12].

[3] Department for Environment, Food and Rural Affairs (Defra) and the Devolved Administrations (2007). *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volumes 1 and 2)*

[4] The Air Quality (England) Regulations 2000. Available at: http://www.legislation.gov.uk/uksi/2000/928/contents/made

[5] The Air Quality (England) (Amendment) Regulations 2002. Available at: http://www.legislation.gov.uk/uksi/2002/3043/contents/made

[6] The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 – Statutory Instrument No.1313. Available at: https://www.legislation.gov.uk/uksi/2020/1313/regulation/1/made

[7] The Air Quality Standards Regulations 2010. Available at: http://www.legislation.gov.uk/uksi/2010/1001/contents/made

[8] The Air Quality Standards (Amendment) Regulations 2016. Available at: https://www.legislation.gov.uk/uksi/2016/1184/contents/made

[9] Environment Bill 2021 (c.30). Available from https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

[10] The Conservation of Habitats and Species Regulations 2017. Available at: http://www.legislation.gov.uk/uksi/2017/1012/contents/made

[11] Ministry of Housing, Communities and Local Government (July 2021) National Planning Policy Framework.

[12] Defra (January, 2019). Clean Air Strategy 2019.

3. METHODOLOGY

3.1. STUDY AREA

CONSTRUCTION

3.1.1. The study area for the construction phase assessment has been defined on the basis of the construction guidance produced by the Institute of Air Quality Management (IAQM)[13] which has been used within the assessment presented herein. This determines that a construction phase assessment should be undertaken where there are:

- 'Human receptors' within 350m of the site boundary, or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s); and/or
- 'Ecological receptors' within 50m of the site boundary, or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).

3.1.2. It is within these distances that the impacts of dust soiling and increased particulate matter in the ambient air will have the greatest impact on local air quality at sensitive receptors.

3.1.3. As this report focuses on potential effects on nearby designated ecological sites (as opposed to potential impacts on human receptors), the construction phase assessment and associated study area has been assessed on the basis of the criteria for ecological receptors only.

OPERATION

3.1.4. Guidance published by both Natural England[14] and the IAQM[15] has been referred to in determining the study area for the air quality assessment. Both guidance documents advocate the use of threshold criteria to determine the need for further assessment, where designated ecological sites are present within 200m of the road edge. These criteria are as follows:

- Changes in traffic due which exceed 1000 vehicles a day (as Annual Average Daily Traffic (AADT)); and/or
- Changes in pollutant concentrations/deposition which exceed 1% of the relevant Critical Level/Load.

3.1.5. Where an exceedance of the above thresholds is not triggered by the Proposed Development 'alone', there is a requirement to consider the Proposed Development against the above thresholds 'in-combination' with other Plans and Projects.

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[13] Institute of Air Quality Management (Version 1.1 Updated June 2016). *Guidance on the Assessment of Dust from Demolition and Construction*

[14] Natural England, 2018, *Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations*

[15] Institute of Air Quality Management, 2019. *A guide to the assessment of air quality impacts on designated nature conservation sites*

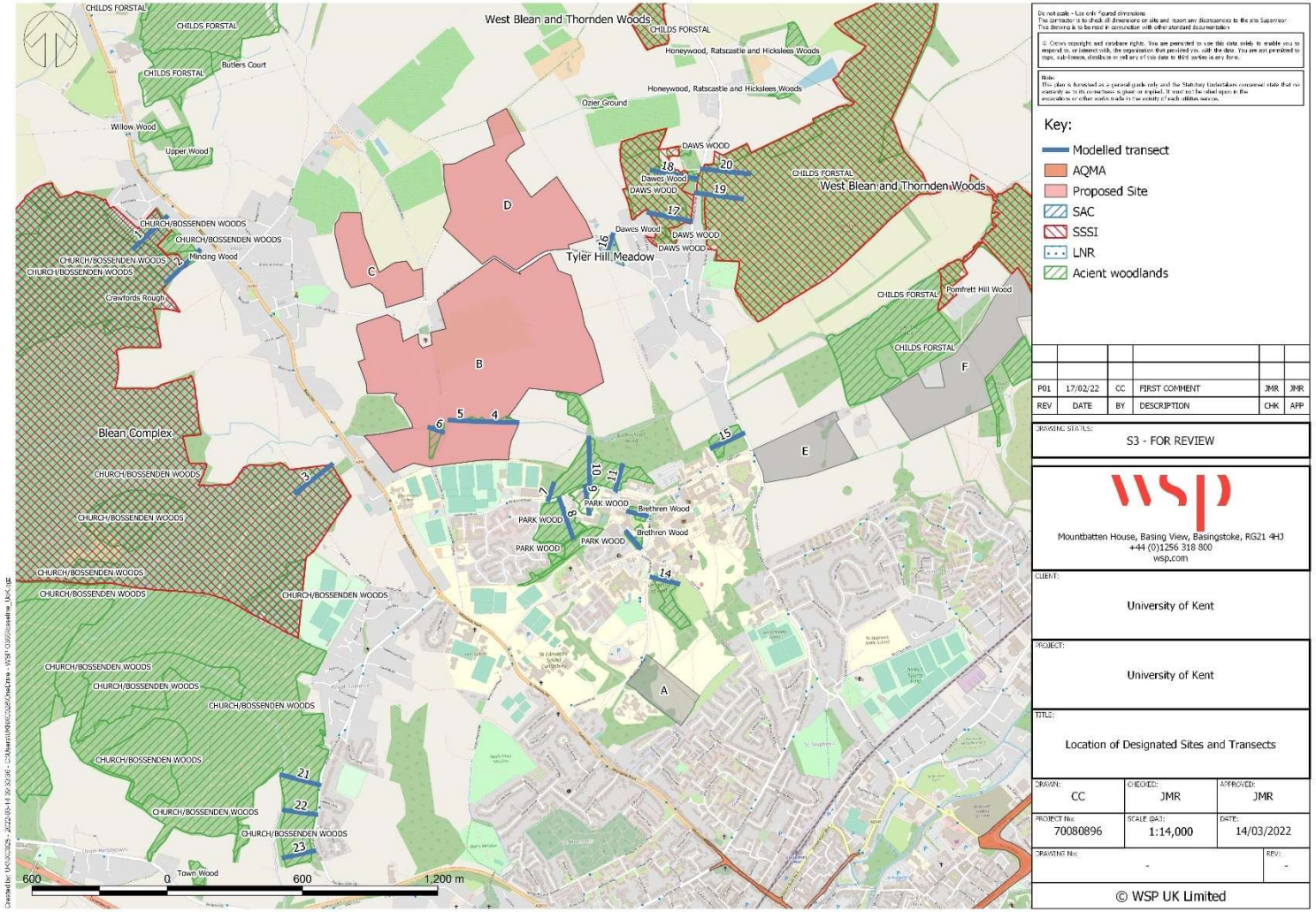
3.1.6. The above traffic data thresholds have been applied to the traffic data provided by WSP as part of their Preliminary Transport Appraisal to define the study area for the assessment (i.e. the model network for detailed dispersion modelling).

3.1.7. The following designated ecological sites fall within the study area:

- Blean Complex SAC (also designated as Church Woods SSSI),
- West Blean And Thornden Woods SSSI,
- Tyler Hill Meadow LNR; and
- Ancient Woodlands (Ancient Woodland within Site B, Park Wood Ancient Woodland, Brethren Wood Ancient Woodland, Ancient Woodlands along University Road and Canterbury Hill, and Church/Bossenden Woods Ancient Woodland).

3.1.8. The locations of the identified designated ecological sites receptors are shown in Figure 1.

Figure 1 - Location of Designated Sites and Transects



3.2. BASELINE STUDY

3.2.1. The baseline study has comprised:

- Review of CCC's latest review and assessment reports[16] and air quality data for the area surrounding the Site, including data from CCC, Defra[17], the Environment Agency (EA)[18;]
- Desk study to confirm the locations of designated ecological sites/receptors that may be sensitive to changes in local air quality; and
- Review of data from the Air Pollution Information Service (APIS)[19].

3.3. CONSTRUCTION PHASE ASSESSMENT

DUST AND PARTICULATE EMISSIONS FROM ON-SITE CONSTRUCTION ACTIVITIES

3.3.1. An assessment of the likely significant impacts on local air quality due to the generation and dispersion of dust and PM_{10} during the construction phase has been undertaken using: the relevant assessment methodology published by the IAQM; the available information for this phase of the Proposed Development provided by the Client and Project Team; and, professional judgement.

3.3.2. The IAQM methodology assesses the risk of potential dust and PM_{10} impacts from the following four sources: demolition; earthworks; general construction activities and track-out. It takes into account the nature and scale of the activities undertaken for each source and the sensitivity of the area to an increase in dust and PM_{10} levels to assign a level of risk. Risks are described in terms of there being a low, medium or high risk of dust impacts. Once the level of risk has been ascertained, then site specific mitigation proportionate to the level of risk is identified, and the significance of residual effects determined.

3.3.3. A summary of the IAQM assessment methodology is provided in Appendix C.

EXHAUST EMISSIONS FROM CONSTRUCTION TRAFFIC AND PLANT

3.3.4. In addition to impacts on local air quality due to on-site construction activities, exhaust emissions from construction vehicles and plant may also have an impact on local air quality adjacent to the routes used by these vehicles to access the Site and in the vicinity of the Site itself. At this stage (i.e. promotion of the Site as a strategic allocation through the Local Plan process) information on the number of vehicles and plant associated with the construction phase was not available. Therefore, a qualitative assessment of their impact on local air quality has been undertaken using professional judgement and by considering the following:

- The number and type of construction traffic and plant likely to be generated by this phase of the Development;

[16] Canterbury City Council (2019). 2019 Air Quality Annual Status Report

[17] Defra Local Air Quality Management (LAQM) Support Pages. Available at: http://laqm.defra.gov.uk/ Accessed on 04 Feb 2022

[18] https://data.gov.uk/dataset/cfd94301-a2f2-48a2-9915-e477ca6d8b7e/pollution-inventory Accessed on 04 Feb 2022

[19] Air Pollution Information System (APIS) http://www.apis.ac.uk/

- The number and proximity of sensitive receptors to the Application Site and along the likely routes to be used by construction vehicles; and
- The likely duration of the construction phase and the nature of the construction activities undertaken.

3.4. OPERATIONAL PHASE ASSESSMENT

MODELLING METHODOLOGY

3.4.1. Air quality dispersion modelling was carried out to determine the potential impacts on the identified ecological sites due to changes in NO_x and NH_3 concentrations and N and acid deposition due to the operation of the Proposed Development. The modelling was undertaken using industry standard software (ADMS-Roads[20]) with reference to relevant assessment guidance including:

- Defra Local Air Quality Management Review and Assessment Technical Guidance[21];
- Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations[22]; and
- The IAQM's guidance on the Assessment of Air Quality Impacts on Designated Nature Conservation Sites[23].

3.4.2. In order to determine the impacts of the Proposed Development both 'alone' and' in-combination' with other Plans and Projects (as required by the Habitats Regulations[24]), three scenarios were modelled:

- 2019 – Baseline Year/Model Verification;
- 2040 – Future Baseline without the Proposed Development (herein referred to as the do minimum (DM)'scenario); and
- 2040 – With the Proposed Development (herein referred to as the do something (DS) scenario).

3.4.3. 2019 is the most recent year for which monitoring data and meteorological data are available to enable verification of the model results, and so this year has been used as the baseline year for this assessment. 2040 is the end of the emerging Local Plan period. Traffic data from 2021 was used to inform the 2019 base year, which was not readily available for the study area.

3.4.4. The traffic flows for the 'without development' scenarios include background growth in the locality of the Site but do not include any contribution to road traffic from the Proposed Development itself. The traffic flows for the 'with development' scenarios contributions to road traffic from the Proposed

[20] Cambridge Environmental Research Consultants Limited (CERC), ADMS-Roads 5. Further information available at: https://www.cerc.co.uk/index.php

[21] DEFRA (2021) Part IV The Environment Act 1995 and Environment (Northern Ireland) Order 2002 Part III, Local Air Quality Management Technical Guidance LAQM.TG(16)

[22] Natural England, 2018, Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations

[23] Institute of Air Quality Management, 2019. A guide to the assessment of air quality impacts on designated nature conservation sites

[24] The Conservation of Habitats and Species Regulations 2017. Available at: http://www.legislation.gov.uk/uksi/2017/1012/contents/made

Development itself, and background growth. For further details regarding traffic data assumptions please refer to the WSP's Preliminary Transport Appraisal.

3.4.5. Therefore, in order to assess the impact of the Proposed Development 'alone', the following scenarios have been compared:

- 2040 DM versus 2040 DS.

3.4.6. Similarly, in order to assess the impact of the Proposed Development 'in-combination' with other Plans and Projects, the following scenarios have been compared:

- 2019 Baseline versus 2040 DS.

3.4.7. This approach allows for forecast improvements in NO_X concentrations and N deposition between 2019 and 2040 to be taken into account within the assessment of 'in-combination' effects.

Sensitive Receptors

3.4.8. To calculate pollutant concentrations within the designated ecological sites, a series of receptor points were placed within the model along a number of transects at 10m intervals up to a distance of 200m. These are shown within Figure 1 and comprise:

- Three transects within Blean Complex SAC;
- Four transects within West Blean And Thornden Woods SSSI;
- One transect within Tyler Hill Meadow LNR; and
- 15 transects within Ancient Woodland in the study area.

3.4.9. The transects all commence at the nearest part of the designated ecological site to the roads edge. In some instances this coincides with the road edge/verge whereas in others the designated ecological site (and therefore transect) is set back from the roads edge.

Vehicle Emission Factors

3.4.10. The model (ADMS Roads) requires the user to input vehicle emission rates for each of the scenarios being assessed (in this instance, 2019 and 2040, with and without the Proposed Development).

3.4.11. Vehicle emission rates of NO_X are assumed to reduce over time, taking into account advances in vehicle and exhaust technology and changes in composition of the vehicle fleet. Whereas NH_3 emissions do not occur as a result of combustion within vehicle engines, rather they are produced by the emissions controls systems that are used to reduce emissions of NO_X, which have been implemented in response to a tightening of the European type approval standards (Euro Standards) for vehicles. Therefore: *"Trends in roadside nitrogen deposition, whether they are increases or decreases, will be driven by how the UK responds to the challenges and opportunities around electrification of the vehicle fleet"* (AQC, 2020).

NO_X Vehicle Emission Rates

3.4.12. Vehicle emission factors for use in the assessment have been obtained using the Emission Factor Toolkit (EFT) version 11.0 (published in November 2021) available on the Defra website[25]. The EFT allows for the calculation of emission factors arising from road traffic for all years between 2018 and 2050. For the predictions of future year emissions, the toolkit takes into account factors such as anticipated advances in vehicle technology and changes in vehicle fleet composition, such that vehicle emissions are assumed to reduce over time.

3.4.13. 2019 emissions have been applied to the 2019 baseline scenario whilst 2030 emissions have been applied to both the 2040 scenarios (both 'without' and 'with the Proposed Development'). This is because the emission factors within the EFT for years beyond 2030 are provided in support of climate assessments and appraisals only. The EFT v11.0 User Guide[26] states *"Where emissions are to be used after 2030 to inform air quality assessments, the appropriate caveats around the limitations of the analysis must be included to accompany the assessment."*

3.4.14. In order to provide a conservative and robust assessment, 2030 NO_X emissions from the EFT have been applied to the 2040 scenarios (both 'without' and 'with the Proposed Development').

NH_3 Vehicle Emission Rates

3.4.15. NH_3 emissions data for 2035 (as a proxy for 2040) were obtained from AQC Ltd CREAM, version 1A[27]. Fleet projections are provided up to 2035 outside London (except for taxis, which are available up to 2030) and up to 2030 within London.

Model Verification

3.4.16. The ADMS Roads dispersion model has been widely validated for this type of assessment and is considered to be fit for purpose. Model validation undertaken by the software developer will not have included validation in the vicinity of the Development.

3.4.17. To determine the performance of the model at a local level, a comparison of modelled results with the results of monitoring carried out within the study area was undertaken. This process of verification aims to minimise modelling uncertainty and systematic error by correcting modelled results by an adjustment factor to gain greater confidence in the final results, and was carried out following the methodology specified in Chapter 7, Section 4, of LAQM.TG(16).

3.4.18. Details of the verification factor calculations for NO_X are presented in Appendix F. A factor of 3.83 was obtained during the verification process, which indicated that the model was under-predicting. This factor was applied to the model road-NO_x outputs prior to conversion to annual mean NO_2

[25] https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html

[26] Defra Emissions Factors Toolkit v11.0 User Guide (November 2021). Available: https://laqm.defra.gov.uk/wp-content/uploads/2021/11/EFTv11.0-user-guide-v1.0.pdf

[27] Air Quality Consultants - Air Quality Reports, Resources & Tools (aqconsultants.co.uk)

concentrations utilising the NO_x to NO_2 calculator (version 8.1, released August 2020) provided by Defra[28].

3.4.19. It has not been possible to verify ammonia emissions from road traffic as no suitable local monitoring data is available to enable this. However, the NH_3 emissions used within the modelling have been obtained from CREAM which have been verified against monitoring (and so represent on-road emissions data which minimises, as far as possible, uncertainty to be removed through model verification in line with the Defra guidance).

Background Concentrations

Background NO_X Concentrations

3.4.20. Background concentrations of NO_x for the study area have been taken from the national maps provided by Defra[54]. These maps provide estimated background concentrations for the whole of the UK at a grid resolution of 1km x 1km, for all years between 2018 and 2030.

3.4.21. Inherent within the background maps is the assumption that background concentrations will improve (i.e. reduce) over time. Similar to the emission factors, 2030 backgrounds have been applied to 2040 (i.e. the end of the emerging Local Plan period) which introduces a degree of conservatism into the modelled predictions for 2040.

3.4.22. It should be noted that for NO_X and particulate matter, the Defra background maps present both the 'total' estimated background concentrations and the individual contributions from a range of emission sources (for example, motorways, aircraft, domestic heating etc.). When detailed modelling of an individual sector is required as part of an air quality assessment, the respective contribution can be subtracted from the overall background estimate to avoid the potential for 'double-counting'.

3.4.23. Contributions from Motorways, Trunk and A roads from inside the specific grid squares have been removed from the background concentrations (for both 2019 and 2030). As some minor roads may be present within the dispersion model and in-sector minor roads have not been removed from the Defra baseline maps, there may be an element of 'double-counting' in some locations.

Background NH_3 Concentrations and N Deposition

3.4.24. The N deposition rates for the 5km grid squares containing the identified designated ecological sites have been obtained from the APIS website.

3.4.25. The deposition rates for 2017 – 2019 have been factored forward to 2030 based on the trend data provided for the Business As Usual (BAU) case within the Nitrogen Futures document[55].

3.4.26. The BAU case assumes the implementation of UK wide measures but no spatial targeting and also assumes that the National Emissions Ceilings Regulations (NECR) targets will not be met. The following factors have been applied:

- Background NH_3 concentrations: +0.08% year on year; and
- Background N deposition: -1.04% year on year.

[28] https://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html#NOxNO2calc

3.4.27. The above approach is considered to represent a conservative and robust assessment of likely background NH_3 concentrations and N deposition. In addition, it does not allow for any degree of reduction that may occur between 2030 and 2040 (as there are no forecasts available).

Results Processing

3.4.28. ADMS Roads was used to predict the road-NO_x and road-NH_3 concentration at each of the receptors/transect points for all of the assessment scenarios.

Annual Mean NO_X Concentrations

3.4.29. Following the application of the verification factor (see above), the adjusted modelled road-NO_x concentrations were added to the background concentrations of NO_X obtained from DEFRA's background mapping (see above) in order to estimate total annual mean NO_X concentrations for comparison with the Critical Level.

Annual Mean NH_3 Concentrations

3.4.30. As the modelled NH_3 concentrations have not been verified, the road-NH_3 concentrations were added directly to the background NH_3 concentrations obtained from the APIS (see above) in order to estimate total annual mean NH_3 concentrations for comparison with the relevant Critical Level.

Calculation of N Deposition

Calculating Dry Deposition Flux

3.4.31. The modelled road pollutant concentrations of NO_X and NH_3 were converted to dry deposition flux(µg/m^2/s) by applying conversion factors as provided in Table 1.

Table 1 - Dry Deposition Velocities

Chemical species	Deposition velocity (m/s)	
NO_2	Grassland (low vegetation)	0.0015
	Forest (tall vegetation)	0.003
NH_3	Grassland (low vegetation)	0.02
	Forest (tall vegetation)	0.03

3.4.32. For NO_2, the modelled road-NO_x concentrations were converted to road-NO_2 concentrations using Defra's NO_x to NO_2 calculator before applying the conversion factors.

3.4.33. As the locations at Blean Complex SAC within 200m of the A290 are predominately broadleaved, mixed and yew woodland, the higher deposition velocities associated with tall vegetation have been used in the calculations.

Calculate N-deposition for dry deposition flux of NO2 and NH3

3.4.34. To convert the dry deposition flux from units of µg/m^2/s (where µg refers to µg of the chemical species) to units of kg/ha/year (where kg refers to kg of N) the dry deposition flux has been multiplied by the relevant conversion factors shown in Table 2.

Table 2 - Dry deposition flux conversion factors for nutrient nitrogen deposition

Chemical species	Conversion factor to kg/ha/year
NO_2	95.9
NH_3	259.7

3.4.35. The modelled road-contributed pollutant concentrations were added to the relevant background N deposition rate to give the total deposition rate at each ecological receptor:

Total nitrogen deposition rate (kg/ha/yr) = ($NO_{2\ \text{dry deposition flux}}$ x 95.9 + $NH_{3\ \text{dry deposition flux}}$ x 259.7) + background N-deposition.

3.4.36. The total N deposition rates were then compared to the lower value of the site-specific Critical Load range applicable to the habitat present in the designated ecological sites.

3.5. SIGNIFICANCE CRITERIA

CONSTRUCTION PHASE

3.5.1. The IAQM assessment methodology recommends that significance criteria are only assigned to the identified risk of dust impacts occurring from a construction activity with appropriate mitigation measures in place. For almost all construction activities, the application of effective mitigation should prevent any significant effects occurring to sensitive receptors and therefore the residual effect will normally be negligible.

3.5.2. For the assessment of the impact of exhaust emissions from plant used on-site and construction vehicles accessing and leaving the Site on local air quality, the significance of residual effects has been determined using professional judgement, with reference to the IAQM's guidance on the Assessment of Air Quality Impacts on Designated Nature Conservation Sites.

OPERATIONAL PHASE

3.5.3. For ecological receptors, it is usually the role of a suitably qualified ecologist, rather than an air quality specialist, to determine whether predicted impacts on air quality within a designated ecological site would result in a significant effect on the habitats present within the site. However, screening criteria can be used by the air quality specialists to identify when predicted impacts are unlikely to result in significant effects, thereby not requiring further assessment or specific mitigation.

3.5.4. To distinguish between negligible impacts and those that could potentially give rise to a significant effect, an established threshold of change in pollutant concentration or deposition rate of 1 percent (%) of the relevant Critical Level or lower Critical Load was applied. Any change of 1% or less is considered negligible and highly unlikely to give rise to an adverse significant effect. However, any change greater than 1% above the Critical Level and/or lower critical load cannot be discounted as

negligible and requires careful consideration by an experienced ecologist to determine the significance of the effect[29].

3.5.5. Details of the relevant Critical Levels and Loads applied to the assessment are provided within Appendix D.

3.6. LIMITATIONS & ASSUMPTIONS

3.6.1. There are uncertainties associated with both measured and predicted concentrations. The model (ADMS Roads) used in this assessment relies on input data (including predicted traffic flows), which also have uncertainties associated with them. The model itself simplifies complex physical systems into a range of algorithms. In addition, local micro-climatic conditions may affect the concentrations of pollutants that the ADMS Roads model will not take into account.

3.6.2. In order to reduce the uncertainty associated with predicted concentrations, model verification has been carried out following guidance set out in LAQM.TG(16). As the model has been verified against local monitoring data and adjusted accordingly, there can be reasonable confidence in the predicted concentrations.

3.6.3. The traffic data screening (and therefore extent of the study area) was restricted to roads for which traffic data were available. It is recommended that the traffic data screening exercise is repeated once further traffic data modelling is available to determine whether there are any addition roads/designated ecological sites which require further consideration.

3.6.4. The default fleet projections in EFT v11.0 are based on fleet growth assumptions which were current before the Covid-19 outbreak in the UK. In consequence, default fleet outputs from the tool do not reflect short or longer term impacts on emissions in 2020 and beyond resulting from behavioural change during the national or local lockdowns.

3.6.5. Traffic data from 2021 was used to inform the 2019 base year, which was not readily available for the study area.

3.6.6. Emissions factors beyond 2030 are not used despite the future year being 2040. This is because the emission factors within the Defra's EFT for years beyond 2030 are provided in support of climate assessments and appraisals only.

[29] Note: exceeding 1% does not in itself mean that there is a significant effect

4. BASELINE CONDITIONS

4.1. LOCAL EMISSION SOURCES

4.1.1. The Site is located in an area where air quality is mainly influenced by emissions from road transport using A290 to the west and Wood Hill/Canterbury Hill to the east. There are a few roads, such as Parkwood Road, Giles Lane and University Road, that run through the campus area and the following areas of Ancient Woodland: Park Wood and Brethren Wood. However, these roads most likely experience low volumes of traffic. Similarly, in most instances, the identified designated ecological sites are located away from major roads (with the exception of Blean Complex SAC and Church Woods, Blean SSSI).

4.1.2. The baseline review (including a review of the EA's public register for industrial installations) indicates that there are no Part A1, A2 or B processes within the vicinity of the Site/identified designated ecological sites that are likely to have a significant effect on local air quality within the study area.

4.2. CCC'S REVIEW & ASSESSMENT OF AIR QUALITY

4.2.1. Currently, CCC has two AQMA's within its administrative area. Only one of these, Canterbury City Centre AQMA, is located within 1.9 km of the Site. This AQMA was first designated in 2006 (AQMA No 1) due to exceedances of the annual mean objective for NO_2 and subsequently expanded in 2011 (AQMA No 2) and 2018 (AQMA No 3) to encompass the arterial roads leading to, and around, the city centre (namely the A2, A28, A299 and A290) and locations where measured concentrations exceeded 36µg/m^3 (i.e. within 10% of the objective).

4.2.2. CCC published its Air Quality Action Plan (AQAP) in 2009 (i.e. three years after the declaration of AQMA No1). This was subsequently updated in 2018 to reflect the changing air quality constraints within the area.

4.2.3. Whilst the AQMA designation and production of the AQAP are targeted towards the protection of human health, in line with CCC's LAQM responsibilities, a number of the measures outlined within the AQAP will benefit air quality in the locality generally, including within the study area/vicinity of the identified ecological sites.

4.3. LOCAL AUTHORITY AIR QUALITY MONITORING DATA

4.3.1. CCC operates a network of 59 passive diffusion tubes in the district and two automatic monitoring stations. Most of the diffusion tubes are located in and around the City Centre AQMA (i.e. away from the Application Site and the identified ecological sites).

4.3.2. CCC's most recent Annual Status Report (ASR), published in 2020, indicates that current air quality within Canterbury is good. Whilst exceedances of the AQS objective for annual mean NO_2 concentrations were recorded at six of CCC's diffusion tube monitoring locations in 2020, none of these monitoring locations are located within the vicinity of the Site/designated ecological sites and are instead located within or close to the existing City Centre AQMA.

4.3.3. Only one diffusion tube falls within 2km of the Site. This diffusion tube (DT58) is located along St Stephens Road, to the northeast of Canterbury City Centre. Annual mean NO_2 concentrations measured at DT58 were considerably below the relevant AQS objective in both 2018 and 2019 (no

data is available prior to 2018). Monitoring data for 2020 is not available and it is considered that 2020 data is not representative due reduction of traffic in the COVID-19 lockdown.

4.3.4. There are no monitoring locations anywhere within the vicinity of the identified designated ecological sites. As discussed within paragraph 4.1.1 above, in most instances the designated ecological sites are located away from major roads (with the exception of Blean Complex SAC and Church Woods, Blean SSSI). Therefore, estimated background concentrations available from DEFRA's webpages (see below) are more likely to be reflective of likely pollutant concentrations within the vicinity of these designated ecological sites than CCC's air quality monitoring data.

4.4. BACKGROUND CONCENTRATIONS OF NO_X

4.4.1. Table 4 summarises background concentrations of NO_X that were obtained for 2019 from DEFRA's webpages for the grid squares containing the identified designated ecological sites. In 2019, the Critical Level of 30µg/m^3 was predicted to be met in all the identified grid squares.

Table 3 - Background Concentrations of NO_X (µg/m^3)

Transect Number	Site Name	Background data grid square coordinates (1 x 1km)	NO_x (µg/m^3)	Exceeds NO_x Critical Level? (µg/m^3)
1-2	Blean Complex SAC	611500, 161500	8.5	No (30)
3	Blean Complex SAC	612500, 160500	8.8	No (30)
4-5	Ancient Woodland	613500, 160500	8.9	No (30)
6	Ancient Woodland	612500, 160500	8.8	No (30)
7-8	Ancient Woodland	613500, 159500	9.8	No (30)
9-11	Ancient Woodland	613500, 160500	8.9	No (30)
12-14	Ancient Woodland	613500, 159500	9.8	No (30)
15	Ancient Woodland	614500, 160500	9.2	No (30)
16	Local Natural Reserve	613500, 161500	8.6	No (30)
17-20	West Blean And Thornden Woods SSSI	614500, 161500	8.6	No (30)
21-23	Ancient Woodland	612500, 158500	9.4	No (30)

4.5. BACKGROUND N AND ACID DEPOSITION

4.5.1. Background rates of N and acid deposition were obtained from the APIS website, where deposition rates have been mapped for the whole of the UK at a grid resolution of 5km x 5km grid squares for a three-year averaging period (2017-2019). This data is presented within Table 5 below.

Table 4 - Background N-deposition and Acid deposition at Ecological Receptors

Transect Number	Name	Background data grid square coordinates (5 x 5km)	Habitat	N-deposition (kg/ha/yr)	Exceeds N-deposition lower Critical Load? (kg/ha/yr)	Acid-deposition (keq/ha/yr)	Exceeds Acid deposition lower Critical Load? (keq/ha/yr)
1-3	Blean Complex SAC	612500, 162500	Broad-leaved, Mixed and yew woodland	24.80	Yes (15)	1.82	No (2.86)
4-6	Ancient Woodland	612500, 162500	Broad-leaved, Mixed and yew woodland	24.80	Yes (10)	1.82	No (2.263)
5	Ancient Woodland	612500, 162500	Broad-leaved, Mixed and yew woodland	24.80	Yes (10)	1.82	No (2.263)
6	Ancient Woodland	612500, 162500	Broad-leaved, Mixed and yew woodland	24.80	Yes (10)	1.82	No (2.263)
7-8	Ancient Woodland	612500, 157500	Broad-leaved, Mixed and yew woodland	29.09	Yes (10)	2.14	No (2.263)
9-11	Ancient Woodland	612500, 162500	Broad-leaved, Mixed and yew woodland	24.80	Yes (10)	1.82	No (2.263)
8	Ancient Woodland	612500, 157500	Broad-leaved, Mixed and yew woodland	29.09	Yes (10)	2.14	No (2.263)
10	Ancient Woodland	612500, 162500	Broad-leaved,	24.80	Yes (10)	1.82	No (2.263)

			Mixed and yew woodland				
11	Ancient Woodland	612500, 162500	Broad-leaved, Mixed and yew woodland	24.80	Yes (10)	1.82	No (2.263)
12	Ancient Woodland	612500, 157500	Broad-leaved, Mixed and yew woodland	29.09	Yes (10)	2.14	No (2.263)
13 - 14	Ancient Woodland	612500, 157500	Broad-leaved, Mixed and yew woodland	29.09	Yes (10)	2.14	No (2.263)
15	Ancient Woodland	612500, 162500	Broad-leaved, Mixed and yew woodland	24.80	Yes (10)	1.82	No (2.263)
16	Local Natural Reserve	612500, 162500	Neutral grassland	14.27	No (20)	1.05	No (5.071)
17 - 20	West Blean And Thornden Woods SSSI	612500, 162500	Broad-leaved, Mixed and yew woodland	24.80	Yes (10)	1.82	No (2.263)
21 - 23	Ancient Woodland	612500, 157500	Broad-leaved, Mixed and yew woodland	29.09	Yes (10)	2.14	No (2.263)

4.5.2. The information from APIS, as shown in the table above, indicates that the lower Critical Load for acid deposition is met at all of the identified designated ecological sites. However, the relevant lower Critical Load value (for Broad-leaved, Mixed and yew woodland) is exceeded at all of the identified designated ecological sites.

4.1. BACKGROUND CONCENTRATIONS OF NH_3

4.1.1. Background concentrations of NH_3 were also obtained from APIS for the identified designated ecological sites. These are provided in Table 6.

Table 5 - Background NH_3 at Ecological Receptors

Transect Number	Site Name	Background data grid square coordinates	Habitat	NH_3 ($\mu g/m^3$)	Exceeds NH_3 Critical Level? ($\mu g/m^3$)

		(5 x 5km)			
1-3	Blean Complex SAC	612500, 162500	Broad-leaved, Mixed and yew woodland	1.15	No (3)
4-6	Ancient Woodland	612500, 162500	Broad-leaved, Mixed and yew woodland	1.15	No (3)
7-8	Ancient Woodland	612500, 157500	Broad-leaved, Mixed and yew woodland	1.61	No (3)
9-11	Ancient Woodland	612500, 162500	Broad-leaved, Mixed and yew woodland	1.15	No (3)
12-14	Ancient Woodland	612500, 157500	Broad-leaved, Mixed and yew woodland	1.61	No (3)
15	Ancient Woodland	612500, 162500	Broad-leaved, Mixed and yew woodland	1.15	No (3)
16	Local Natural Reserve	612500, 162500	Neutral grassland	1.15	No (3)
17-20	West Blean And Thornden Woods SSSI	612500, 162500	Broad-leaved, Mixed and yew woodland	1.15	No (3)
21-23	Ancient Woodland	612500, 157500	Broad-leaved, Mixed and yew woodland	1.61	No (3)

4.1.2. The information from APIS, as shown in the table above, indicates that the applicable Critical Level for NH_3, based on the habitat present, is met at all of the of the identified designated ecological sites.

5. ASSESSMENT OF IMPACTS

5.1. CONSTRUCTION PHASE

DUST AND PM_{10} ARISING FROM ON-SITE ACTIVITIES

5.1.1. Activities that have the potential to generate and/or re-suspend dust and PM_{10} during the construction phased of the Proposed Development include:

- Site clearance and preparation;
- Preparation of temporary access/egress to the Site and haulage routes;
- Earthworks;
- Materials handling, storage, stockpiling, spillage and disposal;
- Movement of vehicles and construction traffic within the Site;
- Exhaust emissions from site plant, especially when used at the extremes of their capacity and during mechanical breakdown;
- Construction of buildings, roads and areas of hardstanding alongside fabrication processes;
- Internal and external finishing and refurbishment; and
- Site landscaping after completion.

5.1.2. The majority of the releases are likely to occur during the 'working week'. However, for some potential release sources (e.g. exposed soil produced from significant earthwork activities) in the absence of dust control mitigation measures, dust generation has the potential to occur 24 hours per day over the period during which such activities are to take place.

ASSESSMENT OF POTENTIAL DUST EMISSION MAGNITUDE

5.1.3. The IAQM assessment methodology has been used to determine the potential dust emission magnitude for the following four different dust and PM_{10} sources: demolition; earthworks; construction; and, trackout. Whilst the IAQM assessment methodology considers both human and ecological receptors, the assessment presented herein has focused on likely effects on the identified designated ecological sites only. The findings of the assessment are presented below

Potential Dust Emission Magnitude

Demolition

5.1.4. No demolition activities will occur at the Site.

Earthworks

5.1.5. The total area of the Site is more than 10,000m^2, the soil type is clay and therefore potentially dusty, and the total material that will be moved is estimated to be more than 100,000 tonnes. More than 10 heavy earth moving vehicles could be active at any one time. Therefore, the potential dust emission magnitude is considered to be large.

Construction

5.1.6. The total volume of buildings to be constructed will be greater than 100,000m^3, with potentially dusty construction materials being used. On site concrete batching and sandblasting unlikely occur. Therefore, the potential dust emission magnitude is considered to be large to medium.

Trackout

5.1.7. Due to the size of the Site, it is assumed that there will be more than 10 HDVs operational at any one time and the length of unpaved roads within the Site will be greater than 100m. Therefore, the potential dust emission magnitude is considered to be large for trackout.

5.1.8. **Table 6** - provides a summary of the potential dust emission magnitude determined for each construction activity considered.

Table 6 - Potential dust emission magnitude

Activity	Dust emission magnitude
Demolition	N/A
Earthworks	Large
Construction Activities	Large / Medium
Trackout	Large

Sensitivity of the Study Area

5.1.9. A representative wind rose is provided in **Appendix F**. This shows that the prevailing wind direction is southwest. Therefore, receptors located to the northeast, north and east of the Site are the most likely to be affected by dust and particulate matter emitted and re-suspended during the construction phase.

5.1.10. Under low wind speed conditions, it is likely that the majority of dust would be deposited in the area immediately surrounding the source. The IAQM guidance suggests that consideration should be given to ecological sites where they are located:

- Within 50 m of the boundary of the Site; or
- Within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).

5.1.11. On this basis, construction activities within the Site and trackout could affect the Ancient Woodlands within Site B lie which lie within 50m of the boundary of the Site. In according to the IAQM guidance, these designated ecological sites are considered of low sensitivity to dust effects.

5.1.12. Both West Blean and Thornden Wood SSSI and Blean Complex SAC fall outside of 50m of the boundary of the Site and are located more than 50m from the A290, which is a potential route used by construction traffic, and over 500m from the Site entrance. These designated ecological sites are, therefore, screened out of further consideration within the assessment with respect to the potential effect of dust during construction activities.

5.1.13. Taking the above into account and following the IAQM assessment methodology, the sensitivity of the area to changes in dust has been derived for each of the construction activities considered. The results are shown in Table 7.

Table 7 - Sensitivity of the study area

Potential impact	Sensitivity of the surrounding area			
	Demolition	Earthworks	Construction	Trackout
Ecological	N/A	Low	Low	Low

Risk of Impacts

5.1.14. The predicted dust emission magnitude has been combined with the defined sensitivity of the area to determine the risk of impacts during the construction phase, prior to mitigation. Table 8 - below provides a summary of the risk of dust impacts for the Proposed Development. The risk category identified for each construction activity has been used to determine the level of mitigation required.

Table 8 - Summary of dust risks

Potential impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Ecological	N/A	Low risk	Low risk	Low risk

5.1.15. Mitigation measures for dust soiling are provided in Chapter 6. These measures are intended to be effective and deliverable and in-line with best practice to deal with the specific air quality problems during construction phases. It is anticipated that with the implementation of effective site-specific mitigation measures the environmental effect will not be significant in most cases.

EMISSIONS TO AIR FROM CONSTRUCTION TRAFFIC

5.1.16. The greatest impact on air quality due to emissions from vehicles and plant associated with the construction phase will be in the areas immediately adjacent to the site access. Construction traffic for the residential development would use the new access road (which goes through an area of Ancient Woodland). Prior to the building of the new access road any construction access would have to be managed through the University estate. No construction traffic would be permitted to use Tyler Hill Road.

5.1.17. Due to the size of the Site, it is considered likely that the construction traffic will be relatively low compared to the existing flows on the above roads. It is estimated that less than 10 HDVs will travel to/from the Site on any given day. Additional car and Light Duty Vehicle movements will also be generated due to daily movements of site staff, small deliveries, equipment transfer etc. Furthermore, the number of construction vehicles accessing the Site will vary from day to day depending on the activities taking place and will be temporary for the duration of the construction works. The emissions from construction vehicles will therefore not result in a long-term impact on local air quality.

5.1.18. Final details of the exact plant and equipment likely to be used on Site will be determined by the appointed contractor, it is considered likely to comprise dumper trucks, excavators, forklift and

trucks. The number of plant and their location within the Site are likely to be variable over the construction period.

5.1.19. Based on the current local air quality in the area, the proximity of the designated ecological sites to the roads likely to be used by construction vehicles, and the likely numbers of construction vehicles and plant that will be used, the impacts are therefore considered to be of negligible significance. Where possible, construction traffic should be routed to avoid bypassing the Ancient Woodland within Site B.

5.2. OPERATION PHASE

5.2.1. Full results of the dispersion modelling are presented in Appendix H and a summary is provided in Tables 10 to 13 below.

Table 9 - Indication of exceedances of 1% of the Critical Level for NO_X

Designated Site	Transect Number	Road	Exceedances of Critical Level (distance to which modelled annual mean NO_X concentrations exceed 30µg/m^3, the NO_x concentration at 0m within the site and next NO_x concentration after the last exceedance are presented in brackets)			Potential for changes > 1% of the Critical Level due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the Critical Level and exceedances of the Critical Level of 30µg/m^3 due to the Proposed Development		Requirement for further assessment based on changes in relation to the Critical Level
			2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
Blean Complex	1	A290 Blean Common	No (14.8 at 0m)	No (9.6 at 0m)	No (9.7 at 0m)	No	No	No	No	No – the CL is met in 2040 with the Proposed Development. Furthermore, there is a decrease in NO_X concentrations over time due to forecast improvements in vehicle emissions.
	2	A290 Blean Common	No (14.5 at 0m)	No (9.7 at 0m)	No (9.4 at 0m)	No	No	No	No	
	3	A290 Blean Common	No (13.9 at 0m)	No (9.5 at 0m)	No (9.7 at 0m)	No	No	No	No	
Ancient Woodland within Site B	4	Access route	No (13.0 at 0m)	No (9.2 at 0m)	No (13.2 at 0m)	Yes (13.4% at 0m)	Yes (10.5% at 0m)	No	No	No – the CL is met in 2040 with the Proposed Development. Furthermore, beyond 30m there is a decrease in NO_X concentrations over time due to forecast improvements in vehicle emissions. Up to 30m, the forecast improvements in air quality over time are offset by the increase in traffic/proposed Access Strategy.
	5	Access route	No (13.0 at 0m)	No (9.2 at 0m)	No (13.2 at 0m)	Yes (13.4% at 0m)	Yes (10.4% at 0m)	No	No	
	6	Access route	No (14.8 at 0m)	No (9.5 at 0m)	No (9.5 at 0m)	Yes (1.1% at 0m)	No	No	No	

Designated Site	Transect Number	Road	Exceedances of Critical Level (distance to which modelled annual mean NO_X concentrations exceed 30µg/m^3, the NO_x concentration at 0m within the site and next NO_x concentration after the last exceedance are presented in brackets)			Potential for changes > 1% of the Critical Level due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the Critical Level and exceedances of the Critical Level of 30µg/m^3 due to the Proposed Development		Requirement for further assessment based on changes in relation to the Critical Level
			2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
Park Wood Ancient Woodland	7	Parkwood Road	Yes (36.1 at 0m, 23.3 at 10m)	No (18.3 at 0m)	No (19.1 at 0m)	Yes (2.7% at 0m)	No	No	No	No – the CL is met in 2040 with the Proposed Development. Furthermore, there is a decrease in NO_X concentrations over time due to forecast improvements in vehicle emissions.
	8	Parkwood Road	No (25.5 at 0m)	No (14.3 at 0m)	No (14.8 at 0m)	Yes (1.5% at 0m)	No	No	No	
	9	Parkwood Road	No (29.6 at 0m)	No (15.5 at 0m)	No (16.2 at 0m)	Yes (2.0% at 0m)	No	No	No	
	10	Parkwood Road	No (26.1 at 0m)	No (14.2 at 0m)	No (14.7 at 0m)	Yes (1.7% at 0m)	No	No	No	
	11	Parkwood Road	Yes (33.5 at 0m, 21.4 at 10m)	No (17.0 at 0m)	No (17.7 at 0m)	Yes (2.4% at 0m)	No	No	No	
Brethren Wood	12	Giles Road	No (19.2 at 0m)	No (11.9 at 0m)	No (12.0 at 0m)	No	No	No	No	No – the CL is met in 2040 with the Proposed Development.

Designated Site	Transect Number	Road	Exceedances of Critical Level (distance to which modelled annual mean NO_X concentrations exceed 30µg/m^3, the NO_x concentration at 0m within the site and next NO_x concentration after the last exceedance are presented in brackets)			Potential for changes > 1% of the Critical Level due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the Critical Level and exceedances of the Critical Level of 30µg/m^3 due to the Proposed Development		Requirement for further assessment based on changes in relation to the Critical Level
			2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
Ancient Woodland	13	Giles Road	No (23.4 at 0m)	No (13.6 at 0m)	No (13.6 at 0m)	No	No	No	No	Furthermore, there is a decrease in NO_X concentrations over time due to forecast improvements in vehicle emissions.
Ancient Woodland	14	University Road	No (22.1 at 0m)	No (13.1 at 0m)	No (13.2 at 0m)	No	No	No	No	No – the CL is met in 2040 with the Proposed Development. Furthermore, there is a decrease in NO_X concentrations over time due to forecast improvements in vehicle emissions.
Ancient Woodland	15	Canterbury Hill	Yes (34.4 at 0m, 22.9 at 10m)	No (17.7 at 0m)	No (18.9 at 0m)	Yes (4.2% at 0m)	No	No	No	No – the CL is met in 2040 with the Proposed Development. Furthermore, there is a decrease in NO_X concentrations over time due to forecast improvements in vehicle emissions.
Tyler Hill Meadow LNR	16	Tyler Hill Road	No (18.2 at 0m)	No (11.1 at 0m)	No (14.1 at 0m)	Yes (10.0% at 0m)	No	No	No	No – the CL is met in 2040 with the Proposed Development. Furthermore, there is a decrease in NO_X concentrations over time due to forecast improvements in vehicle emissions.
West Blean and	17	Hackington Road	No (29.7 at 0m)	No (15.6 at 0m)	No (15.7 at 0m)	No	No	No	No	No – the CL is met in 2040 with the Proposed Development.

Designated Site	Transect Number	Road	Exceedances of Critical Level (distance to which modelled annual mean NO_X concentrations exceed 30µg/m^3, the NO_x concentration at 0m within the site and next NO_x concentration after the last exceedance are presented in brackets)			Potential for changes > 1% of the Critical Level due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the Critical Level and exceedances of the Critical Level of 30µg/m^3 due to the Proposed Development		Requirement for further assessment based on changes in relation to the Critical Level
			2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
Thornden Woods SSSI	18	Hackington Road	Yes (33.7 at 0m, 21.1 at 10m)	No (17.4 at 0m)	No (17.4 at 0m)	No	No	No	No	Furthermore, there is a decrease in NO_X concentrations over time due to forecast improvements in vehicle emissions.
	19	Hackington Road	Yes (46.2 at 0m, 24.3 at 10m)	No (22.1 at 0m)	No (22.2 at 0m)	No	No	No	No	
	20	Hackington Road	Yes (45.5 at 0m, 23.8 at 10m)	No (21.9 at 0m)	No (22.0 at 0m)	No	No	No	No	
Church//Bossenden Woods Ancient Woodland	21	Rough Common Road	Yes (39.4 at 0m, 24.5 at 10m)	No (19.6 at 0m)	No (21.4 at 0m)	Yes (6.1% at 0m)	No	No	No	No – the CL is met in 2040 with the Proposed Development. Furthermore, there is a decrease in NO_X concentrations over time due to forecast improvements in vehicle emissions.
	22	Rough Common Road	Yes (33.4 at 0m, 23.5 at 10m)	No (17.2 at 0m)	No (18.6 at 0m)	Yes (4.7% at 0m)	No	No	No	

Designated Site	Transect Number	Road	Exceedances of Critical Level (distance to which modelled annual mean NO_x concentrations exceed 30µg/m^3, the NO_x concentration at 0m within the site and next NO_x concentration after the last exceedance are presented in brackets)			Potential for changes > 1% of the Critical Level due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the Critical Level and exceedances of the Critical Level of 30µg/m^3 due to the Proposed Development		Requirement for further assessment based on changes in relation to the Critical Level
			2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
	23	Rough Common Road	No (28.4 at 0m)	No (15.2 at 0m)	No (16.3 at 0m)	Yes (3.6% at 0m)	No	No	No	

Table 10 - Indication of exceedances of 1% of the Critical Level for NH_3

Designated Site	Transect Number	Road	Exceedances of Critical Level (distance to which modelled annual mean NH_3 concentrations exceed 3µg/m^3, the NH_3 concentration at 0m within the site and next NH_3 concentration after the last exceedance are presented in brackets)			Potential for changes > 1% of the Critical Level due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the Critical Level and exceedances of the Critical Level of 30µg/m^3 due to the Proposed Development		Requirement for further assessment based on changes in relation to the CL
			2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
Blean Complex	1	A290 Blean Common	No (1.19 at 0m)	No (1.21 at 0m)	No (1.21 at 0m)	No	No	No	No	No – the CL is met in 2040 with the Proposed Development
	2	A290 Blean Common	No (1.18 at 0m)	No (1.20 at 0m)	No (1.21 at 0m)	No	No	No	No	
	3	A290 Blean Common	No (1.17 at 0m)	No (1.19 at 0m)	No (1.19 at 0m)	No	No	No	No	

Designated Site	Transect Number	Road	Exceedances of Critical Level (distance to which modelled annual mean NH_3 concentrations exceed 3µg/m^3, the NH_3 concentration at 0m within the site and next NH_3 concentration after the last exceedance are presented in brackets)			Potential for changes > 1% of the Critical Level due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the Critical Level and exceedances of the Critical Level of 30µg/m^3 due to the Proposed Development		Requirement for further assessment based on changes in relation to the CL
			2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
Ancient Woodland within Site B	4	Access route	No (1.16 at 0m)	No (1.17 at 0m)	No (1.39 at 0m)	Yes (7.3% at 0m)	Yes (7.7% at 0m)	No	No	No – whilst there are exceedances which equate to 1% (or more) of the CL, both 'alone' and 'in-combination', the CL is met in 2040 with the Proposed Development.
	5	Access route	No (1.16 at 0m)	No (1.17 at 0m)	No (1.39 at 0m)	Yes (7.1% at 0m)	Yes (7.5% at 0m)	No	No	
	6	Access route	No (1.16 at 0m)	No (1.18 at 0m)	No (1.19 at 0m)	No	No	No	No	
Park Wood Ancient Woodland	7	Parkwood Road	No (1.92 at 0m)	No (2.04 at 0m)	No (2.08 at 0m)	Yes (1.2% at 0m)	Yes (5.5% at 0m)	No	No	No – whilst there are exceedances which equate to 1% (or more) of the CL both 'alone' (Transect 7 only) and 'in-combination', the CL is met in 2040 with the Proposed Development.
	8	Parkwood Road	No (1.76 at 0m)	No (1.83 at 0m)	No (1.85 at 0m)	No	Yes (3.0% at 0m)	No	No	
	9	Parkwood Road	No (1.38 at 0m)	No (1.47 at 0m)	No (1.50 at 0m)	No	Yes (4.1% at 0m)	No	No	
	10	Parkwood Road	No (1.33 at 0m)	No (1.41 at 0m)	No (1.43 at 0m)	No	Yes (3.3% at 0m)	No	No	
	11	Parkwood Road	No (1.15 at 0m)	No (1.56 at 0m)	No (1.59 at 0m)	Yes (1.1% at 0m)	Yes (5.0% at 0m)	No	No	
	12	Giles Road	No (1.68 at 0m)	No (1.72 at 0m)	No (1.72 at 0m)	No	Yes (1.4% at 0m)	No	No	No – whilst there are exceedances

Designated Site	Transect Number	Road	Exceedances of Critical Level (distance to which modelled annual mean NH_3 concentrations exceed 3µg/m^3, the NH_3 concentration at 0m within the site and next NH_3 concentration after the last exceedance are presented in brackets)			Potential for changes > 1% of the Critical Level due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the Critical Level and exceedances of the Critical Level of 30µg/m^3 due to the Proposed Development		Requirement for further assessment based on changes in relation to the CL
			2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
Brethren Wood Ancient Woodland	13	Giles Road	No (1.74 at 0m)	No (1.80 at 0m)	No (1.80 at 0m)	No	Yes (2.1% at 0m)	No	No	which equate to 1% (or more) of the CL 'in-combination', the CL is met in 2040 with the Proposed Development.
Ancient Woodland	14	University Road	No (1.71 at 0m)	No (1.76 at 0m)	No (1.76 at 0m)	No	Yes (1.7% at 0m)	No	No	No – whilst there are exceedances which equate to 1% (or more) of the CL 'in-combination', the CL is met in 2040 with the Proposed Development.
Ancient Woodland	15	Canterbury Hill	No (1.49 at 0m)	No (1.63 at 0m)	No (1.70 at 0m)	Yes (2.3% at 0m)	Yes (6.9% at 0m)	No	No	No – whilst there are exceedances which equate to 1% (or more) of the CL, both 'alone' and 'in-combination', the CL is met in 2040 with the Proposed Development.
Tyler Hill Meadow LNR	16	Tyler Hill Road	No (1.26 at 0m)	No (1.31 at 0m)	No (1.49 at 0m)	Yes (5.9% at 0m)	Yes (7.6% at 0m)	No	No	No – whilst there are exceedances which equate to 1% (or more) of

Designated Site	Transect Number	Road	Exceedances of Critical Level (distance to which modelled annual mean NH_3 concentrations exceed 3µg/m^3, the NH_3 concentration at 0m within the site and next NH_3 concentration after the last exceedance are presented in brackets)			Potential for changes > 1% of the Critical Level due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the Critical Level and exceedances of the Critical Level of 30µg/m^3 due to the Proposed Development		Requirement for further assessment based on changes in relation to the CL
			2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
										the CL, both 'alone' and 'in-combination', the CL is met in 2040 with the Proposed Development.
West Blean and Thornden Woods SSSI	17	Hackington Road	No (1.41 at 0m)	No (1.52 at 0m)	No (1.52 at 0m)	No	Yes (3.8% at 0m)	No	No	No – whilst there are exceedances which equate to 1% (or more) of the CL 'in-combination', the CL is met in 2040 with the Proposed Development.
	18	Hackington Road	No (1.48 at 0m)	No (1.62 at 0m)	No (1.62 at 0m)	No	Yes (4.6% at 0m)	No	No	
	19	Hackington Road	No (1.7 at 0m)	No (1.92 at 0m)	No (1.91 at 0m)	No	Yes (7.2% at 0m)	No	No	
	20	Hackington Road	No (1.68 at 0m)	No (1.89 at 0m)	No (1.89 at 0m)	No	Yes (7.0% at 0m)	No	No	
Church/ Bossenden Woods Ancient Woodland	21	Rough Common Road	No (2.00 at 0m)	No (2.17 at 0m)	No (2.26 at 0m)	Yes (3.1% at 0m)	Yes (8.7% at 0m)	No	No	No – whilst there are exceedances which equate to 1% (or more) of the CL 'both 'alone' (Transects 22 and 23 only) and in-combination', the CL is met in 2040
	22	Rough Common Road	No (1.90 at 0m)	No (2.03 at 0m)	No (2.10 at 0m)	Yes (2.3% at 0m)	Yes (6.5% at 0m)	No	No	
	23	Rough Common Road	No (1.82 at 0m)	No (1.92 at 0m)	No (1.97 at 0m)	Yes (1.7% at 0m)	Yes (4.8% at 0m)	No	No	

Designated Site	Transect Number	Road	Exceedances of Critical Level (distance to which modelled annual mean NH_3 concentrations exceed 3µg/m^3, the NH_3 concentration at 0m within the site and next NH_3 concentration after the last exceedance are presented in brackets)			Potential for changes > 1% of the Critical Level due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the Critical Level and exceedances of the Critical Level of 30µg/m^3 due to the Proposed Development		Requirement for further assessment based on changes in relation to the CL
			2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
										with the Proposed Development.

Table 11 - Indication of exceedances of 1% of the Critical Load for N Deposition

Designation	Transect Number	Habitat	Relevant CL range (in kg/N/ha/yr)	Exceedances of Lower CL Value (distance to which exceedances occur, the modelled CL at 0m within the site and next modelled CL after the last exceedance are presented in brackets - kg/N/ha/yr)			Potential for changes greater than 1% of the CL due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the relevant CL and exceedances of the Lower CL value due to the Proposed Development (distance to which these occur in brackets)		Requirement for further assessment based on changes in relation to the CL
				2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
Blean Complex	1	Broadleaved Woodland	15 - 20	Yes (0m, all of the transect, 25.7 at 0m, 25.0m at 200m)	Yes (0m, all of the transect, 22.6 at 0m, 22.1 at 200m)	Yes (0m, all of the transect, 22.6 at 0m, 22.1 at 200m)	No	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 20.5% at 0m to 19.6% at 200m)	No	No	No – there is an overall decrease in N deposition in the future (based on the BAU case presented in Nitrogen Futures). The predicted increases due to the Proposed Development are small in comparison (and below 1% of the CL).
	2	Broadleaved Woodland	15 - 20	Yes (0m, all of the transect, 25.6 at	Yes (0m, all of the transect, 22.5 at	Yes (0m, all of the transect, 22.6 at 0m,	No	No – there is a modelled reduction in N deposition 'in-	No	No	

Designation	Transect Number	Habitat	Relevant CL range (in kg/N/ha/yr)	Exceedances of Lower CL Value (distance to which exceedances occur, the modelled CL at 0m within the site and next modelled CL after the last exceedance are presented in brackets - kg/N/ha/yr)			Potential for changes greater than 1% of the CL due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the relevant CL and exceedances of the Lower CL value due to the Proposed Development (distance to which these occur in brackets)		Requirement for further assessment based on changes in relation to the CL
				2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
				0m, 25.0 at 200m)	0m, 22.1 at 200m)	22.1 at 200m)		combination' (ranging from 20.3% at 0m to 19.5% at 200m)			
	3	Broadleaved Woodland	15 - 20	Yes (0m, all of the transect, 25.4 at 0m, 25.1 at 200m)	Yes (0m, all of the transect, 22.3 at 0m, 22.1 at 200m)	Yes (0m, all of the transect, 22.4 at 0m, 22.1 at 200m)	No	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 19.9% at 0m to 19.5% at 200m)	No	No	
Ancient Woodland within Site B	4	Broadleaved Woodland	10	Yes (0m, all of the transect, 25.1 at 0m, 25.1 at 200m)	Yes (0m, all of the transect, 22.1 at 0m, 22.1 at 200m)	Yes (0m, all of the transect, 24.6 at 0m, 22.2 at 200m)	Yes – up to 170m (24.4% at 0m to 1.04% at 170m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 5.4% at 0m to 28.8% at 200m)	Yes – up to 170m	No	The lower CL value for woodland is exceeded in 2019 Base and 2040 without the Proposed Development. However, there is an overall decrease in N deposition over time (based on the BAU case presented in Nitrogen Futures). The predicted increases due to the Proposed
	5	Broadleaved Woodland	10	Yes (0m, all of the transect, 25.1 at 0m, 25.1 at 80m)	Yes (0m, all of the transect, 22.1 at	Yes (0m, all of the transect, 24.5 at 0m,	Yes – up to 80m (23.9% at 0m to 1.82% at 80m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from	Yes – up to 80m	No	

Designation	Transect Number	Habitat	Relevant CL range (in kg/N/ha/yr)	Exceedances of Lower CL Value (distance to which exceedances occur, the modelled CL at 0m within the site and next modelled CL after the last exceedance are presented in brackets - kg/N/ha/yr)			Potential for changes greater than 1% of the CL due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the relevant CL and exceedances of the Lower CL value due to the Proposed Development (distance to which these occur in brackets)		Requirement for further assessment based on changes in relation to the CL
				2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
					0m, 22.2 at 80m)	22.3 at 80m)		5.9% at 0m to 28.0% at 80m)			Development (particularly along Transects 4 and 5) should be discussed with the Project Ecologist in the context of the overall decreases.
	6	Broadleaved Woodland	10	Yes (0m, all of the transect, 25.2 at 0m, 25.2 at 50m)	Yes (0m, all of the transect, 22.2 at 0m, 22.2 at 50m)	Yes (0m, all of the transect, 22.3 at 0m, 22.3 at 50m)	Yes – up to 40m (1.45% at 0m to 1.03% at 40m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 28.5% at 0m to 28.8% at 50m)	Yes – up to 40m	No	
Park Wood Ancient Woodland	7	Broadleaved Woodland	10	Yes (0m, all of the transect, 35.2 at 0m, 29.9 at 70m)	Yes (0m, all of the transect, 30.5 at 0m, 26.3 at 70m)	Yes (0m, all of the transect, 31.0 at 0m, 26.4 at 70m)	Yes – up to 40m (4.27% at 0m to 1.01% at 30m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 42.0% at 0m to 35.4% at 70m)	Yes – up to 40m	No	The lower CL value for woodland is exceeded in 2019 Base and 2040 without the development. However, there is an overall decrease in N deposition over time (based on the BAU case presented in Nitrogen Futures). The predicted increases due to the development are small in comparison.
	8	Broadleaved Woodland	10	Yes (0m, all of the transect, 32.3 at 0m, 29.6 at 180m)	Yes (0m, all of the transect, 28.2 at 0m, 26.1 at 180m)	Yes (0m, all of the transect, 28.4 at 0m, 26.2 at 180m)	Yes – up to 10m (2.31% at 0m to 1.29% at 10m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 38.8% at 0m	Yes – up to 10m	No	

Designation	Transect Number	Habitat	Relevant CL range (in kg/N/ha/yr)	Exceedances of Lower CL Value (distance to which exceedances occur, the modelled CL at 0m within the site and next modelled CL after the last exceedance are presented in brackets - kg/N/ha/yr)			Potential for changes greater than 1% of the CL due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the relevant CL and exceedances of the Lower CL value due to the Proposed Development (distance to which these occur in brackets)		Requirement for further assessment based on changes in relation to the CL
				2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
								to 34.9% at 180m)			
	9	Broadleaved Woodland	10	Yes (0m, all of the transect, 29.5 at 0m, 25.4 at 110m)	Yes (0m, all of the transect, 25.6 at 0m, 22.4 at 110m)	Yes (0m, all of the transect, 25.9 at 0m, 22.4 at 110m)	Yes – up to 20m (3.18% at 0m to 1.02% at 20m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 35.5% at 0m to 30.2% at 110m)	Yes – up to 10m	No	
	10	Broadleaved Woodland	10	Yes (0m, all of the transect, 28.6 at 0m, 25.2 at 200m)	Yes (0m, all of the transect, 24.9 at 0m, 22.2 at 200m)	Yes (0m, all of the transect, 25.1 at 0m, 22.3 at 200m)	Yes – up to 20m (2.6% at 0m to 1.06% at 20m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 34.5% at 0m to 29.6% at 200m)	Yes – up to 20m	No	
	11	Broadleaved Woodland	10	Yes (0m, all of the transect, 30.5 at 0m, 25.4 at 110m)	Yes (0m, all of the transect, 26.5 at 0m, 22.4 at 110m)	Yes (0m, all of the transect, 26.9 at 0m, 22.4 at110m)	Yes – up to 20m (3.86% at 0m to 1.14% at 20m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 36.7% at 0m	Yes – up to 20m	No	

Designation	Transect Number	Habitat	Relevant CL range (in kg/N/ha/yr)	Exceedances of Lower CL Value (distance to which exceedances occur, the modelled CL at 0m within the site and next modelled CL after the last exceedance are presented in brackets - kg/N/ha/yr)			Potential for changes greater than 1% of the CL due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the relevant CL and exceedances of the Lower CL value due to the Proposed Development (distance to which these occur in brackets)		Requirement for further assessment based on changes in relation to the CL
				2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
								to 30.1% at 110m)			
Brethren Wood Ancient Woodland	12	Broadleaved Woodland	10	Yes (0m, all of the transect, 30.7 at 0m, 29.9 at 70m)	Yes (0m, all of the transect, 26.9 at 0m, 26.3 at 70m)	Yes (0m, all of the transect, 27.0 at 0m, 26.3 at 70m)	No	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 37.2% at 0m to 35.6% at 70m)	No	No	No – there is an overall decrease in N deposition in the future (based on the BAU case presented in Nitrogen Futures). The predicted increases due to the Proposed Development are small (and below 1% of the CL).
	13	Broadleaved Woodland	10	Yes (0m, all of the transect, 31.8 at 0m, 29.9m at 90m)	Yes (0m, all of the transect, 27.9 at 0m, 26.3 at 90m)	Yes (0m, all of the transect, 27.9 at 0m, 26.3 at 90m)	No	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 39.4% at 0m to 35.6% at 90m)	No	No	
Ancient Woodland	14	Broadleaved Woodland	10	Yes (0m, all of the transect, 31.4 at 0m, 29.7 at 110m)	Yes (0m, all of the transect, 27.4 at 0m, 26.2 at 110m)	Yes (0m, all of the transect, 27.5 at 0m, 26.2 at 110m)	No	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 39.2% at 0m	No	No	No – there is an overall decrease in N deposition in the future (based on the BAU case presented in Nitrogen Futures). The predicted increases due to the Proposed Development are

Designation	Transect Number	Habitat	Relevant CL range (in kg/N/ha/yr)	Exceedances of Lower CL Value (distance to which exceedances occur, the modelled CL at 0m within the site and next modelled CL after the last exceedance are presented in brackets - kg/N/ha/yr)			Potential for changes greater than 1% of the CL due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the relevant CL and exceedances of the Lower CL value due to the Proposed Development (distance to which these occur in brackets)		Requirement for further assessment based on changes in relation to the CL
				2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
								to 35.3% at 110m)			small in comparison (and below 1% of the CL).
Ancient Woodland	15	Broadleaved Woodland	10	Yes (0m, all of the transect, 31.1 at 0m, 25.6 at 140m)	Yes (0m, all of the transect, 27.2 at 0m, 22.5 at 140m)	Yes (0m, all of the transect, 28.0 at 0m, 22.5 at 140m)	Yes – up to 50m (7.61% at 0m to 1.04% at 50m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 31.2% at 0m to 30.3% at 140m)	Yes – up to 50m	No	No – there is an overall decrease in N deposition in the future (based on the BAU case presented in Nitrogen Futures). The predicted increases due to the Proposed Development are small in comparison.
Tyler Hill Meadow LNR	16	Neutral grassland	20-30	No (15.4 at 0m)	No (13.5 at 0m)	No (14.4 at 0m)	Yes – up to 2m (4.89% at 0m to 1.13% at 20m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 4.8% at 0m to 8.3% at 100m)	No	No	No – there is an overall decrease in N deposition in the future (based on the BAU case presented in Nitrogen Futures). The predicted increases due to the Proposed Development are small in comparison.
West Blean and Thornden Woods SSSI	17	Broadleaved Woodland	10	Yes (0m, all of the transect, 29.9 at 0m, 25.1 at 190m)	Yes (0m, all of the transect, 26.1 at	Yes (0m, all of the transect, 26.1 at 0m,	No	No – there is a modelled reduction in N deposition 'in-combination' (ranging from	No	No	No – there is an overall decrease in N deposition in the future (based on the BAU case presented in Nitrogen Futures). The

Designation	Transect Number	Habitat	Relevant CL range (in kg/N/ha/yr)	Exceedances of Lower CL Value (distance to which exceedances occur, the modelled CL at 0m within the site and next modelled CL after the last exceedance are presented in brackets - kg/N/ha/yr)			Potential for changes greater than 1% of the CL due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the relevant CL and exceedances of the Lower CL value due to the Proposed Development (distance to which these occur in brackets)		Requirement for further assessment based on changes in relation to the CL
				2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
					0m, 22.2 at 190m)	22.2 at 190m)		37.5% at 0m to 29.3% at 190m)			predicted increases due to the Proposed Development are small in comparison (and below 1% of the CL).
	18	Broadleaved Woodland	10	Yes (0m, all of the transect, 31.0 at 0m, 25.1 at 200m)	Yes (0m, all of the transect, 27.1 at 0m, 22.1 at 200m)	Yes (0m, all of the transect, 27.1 at 0m, 22.2 at 200m)	No	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 39.6% at 0m to 29.2% at 200m)	No	No	
	19	Broadleaved Woodland	10	Yes (0m, all of the transect, 34.5 at 0m, 25.2 at 200m)	Yes (0m, all of the transect, 30.2 at 0m, 22.2 at 200m)	Yes (0m, all of the transect, 30.2 at 0m, 22.2 at 200m)	No	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 42.8% at 0m to 29.5% at 200m)	No	No	
	20	Broadleaved Woodland	10	Yes (0m, all of the transect, 34.3 at 0m, 25.1 at 200m)	Yes (0m, all of the transect, 30.0 at 0m, 22.2 at 200m)	Yes (0m, all of the transect, 30.0 at 0m, 22.2 at 200m)	No	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 42.8% at 0m	No	No	

Designation	Transect Number	Habitat	Relevant CL range (in kg/N/ha/yr)	Exceedances of Lower CL Value (distance to which exceedances occur, the modelled CL at 0m within the site and next modelled CL after the last exceedance are presented in brackets - kg/N/ha/yr)			Potential for changes greater than 1% of the CL due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the relevant CL and exceedances of the Lower CL value due to the Proposed Development (distance to which these occur in brackets)		Requirement for further assessment based on changes in relation to the CL
				2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
								to 29.4% at 200m)			
Church//Bossenden Woods Ancient Woodland	21	Broadleaved Woodland	10	Yes (0m, all of the transect, 36.5 at 0m, 29.5 at 170m)	Yes (0m, all of the transect, 31.9 at 0m, 26.0 at 170m)	Yes (0m, all of the transect, 33.0 at 0m, 26.0 at 170m)	Yes – up to 60m (10.5% at 0m to 1.02% at 60m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 35.3% at 0m to 34.6% at 170m)	Yes – up to 60m	No	No – there is an overall decrease in N deposition in the future (based on the BAU case presented in Nitrogen Futures). The predicted increases due to the development are relatively small in comparison.
	22	Broadleaved Woodland	10	Yes (0m, all of the transect, 34.8 at 0m, 29.6 at 140m)	Yes (0m, all of the transect, 30.4 at 0m, 26.1 at 140m)	Yes (0m, all of the transect, 31.2 at 0m, 26.1 at 140m)	Yes – up to 60m (8.0% at 0m to 1.03% at 60m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 35.9% at 0m to 34.8% at 140m)	Yes – up to 60m	No	
	23	Broadleaved Woodland	10	Yes (0m, all of the transect, 33.4 at 0m, 29.7 at 130m)	Yes (0m, all of the transect, 29.2 at 0m, 26.2 at 130m)	Yes (0m, all of the transect, 29.8 at 0m, 26.2 at 130m)	Yes – up to 50m (6.07% at 0m to 1.09% at 50m).	No – there is a modelled reduction in N deposition 'in-combination' (ranging from 36.2% at 0m	Yes – up to 50m	No	

Designation	Transect Number	Habitat	Relevant CL range (in kg/N/ha/yr)	Exceedances of Lower CL Value (distance to which exceedances occur, the modelled CL at 0m within the site and next modelled CL after the last exceedance are presented in brackets - kg/N/ha/yr)			Potential for changes greater than 1% of the CL due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the relevant CL and exceedances of the Lower CL value due to the Proposed Development (distance to which these occur in brackets)		Requirement for further assessment based on changes in relation to the CL
				2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
								to 35.0% at 130m)			

Table 12 - Indication of exceedances of 1% of the Critical Load for Acid Deposition

Designation	Transect Number	Habitat	Relevant CL (in keq/N/ha/yr)	Exceedances of Lower CL Value (distance to which exceedances occur, the modelled CL at 0m within the site and next modelled CL after the last exceedance are presented in brackets - keq/ha/yr)			Potential for changes greater than 1% of the CL due to the Proposed Development (distance to which these occur in brackets)		Potential for changes greater than 1% of the relevant CL and exceedances of the Lower CL value due to the Proposed Development (distance to which these occur in brackets)		Requirement for further assessment based on changes in relation to the CL
				2019 Baseline	2040 Future Baseline	2040 Do-Something	'Alone'	'In-combination'	'Alone'	'In-combination'	
Blean Complex	1	Broadleaved Woodland	2.86	No (1.89 at 0m)	No (1.66 at 0m)	No (1.66 at 0m)	No	No	No	No	No – The predicted increases due to the Proposed Development are small (and below 1% of the CL). The CL is met in 2040, with the Proposed Development.
	2	Broadleaved Woodland	2.86	No (1.88 at 0m)	No (1.65 at 0m)	No (1.65 at 0m)	No	No	No	No	
	3	Broadleaved Woodland	2.86	No (1.86 at 0m)	No (1.64 at 0m)	No (1.64 at 0m)	No	No	No	No	

Ancient Woodland within Site B	4	Broadleaved Woodland	2.263	No (1.84 at 0m)	No (1.63 at 0m)	No (1.80 at 0m)	Yes – up to 30m (6.1% at 0m to 1.1% at 30	No	No	No	Whilst there are exceedances of 1% of the CL due to the Proposed Development 'alone', the CL is met in 2040 with the Proposed Development.
	5	Broadleaved Woodland	2.263	No (1.84 at 0m)	No (1.63 at 0m)	No (1.80 at 0m)	Yes – up to 30m (6.0% at 0m to 1.1% at 30m.	No	No	No	
	6	Broadleaved Woodland	2.263	No (1.85 at 0m)	No (1.63 at 0m)	No (1.64 at 0m)	No	No	No	No	
Park Wood Ancient Woodland	7	Broadleaved Woodland	2.263	No (2.57 at 0m)	No (2.23 at 0m)	No (2.26 at 0m)	Yes – up to 0m (1.3% at 0m to 0.6% at 10m)	No	Yes – up to 0m	No	Whilst there are exceedances of 1% of the CL due to the Proposed Development 'alone', the CL is met in 2040 with the Proposed Development.
	8	Broadleaved Woodland	2.263	No (2.37 at 0m)	No (2.07 at 0m)	No (2.08 at 0m)	No	No	No	No	
	9	Broadleaved Woodland	2.263	No (2.15 at 0m)	No (1.87 at 0m)	No (1.89 at 0m)	No	No	No	No	
	10	Broadleaved Woodland	2.263	No (2.09 at 0m)	No (1.82 at 0m)	No (1.84 at 0m)	No	No	No	No	
	11	Broadleaved Woodland	2.263	No (2.23 at 0m)	No (1.94 at 0m)	No (1.96 at 0m)	No	No	No	No	
	12	Broadleaved Woodland	2.263	No (2.25 at 0m)	No (1.98 at 0m)	No (1.98 at 0m)	No	No	No	No	No – The predicted

Brethren Wood Ancient Woodland	13	Broadleaved Woodland	2.263	No (2.33 at 0m)	No (2.04 at 0m)	No (2.05 at 0m)	No	No	No	No	increases due to the development are small in comparison. The CL is met in 2040, with the Proposed Development.
Ancient Woodland	14	Broadleaved Woodland	2.263	No (2.30 at 0m)	No (2.01 at 0m)	No (2.01 at 0m)	No	No	No	No	No – The predicted increases due to the development are small in comparison. The CL is met in 2040, with the Proposed Development.
Ancient Woodland	15	Broadleaved Woodland	2.263	No (2.27 at 0m)	No (1.99 at 0m)	No (2.04 at 0m)	Yes – 0m only (2.4% at 0m)	No	No	No	No – The predicted increases due to the development are small in comparison. The CL is met in 2040, with the Proposed Development.
Tyler Hill Meadow LNR	16	Neutral grassland	5.07	No (1.13 at 0m)	No (0.99 at 0m)	No (1.06 at 0m)	Yes - 0m only (1.4% at 0m)	No	No	No	No – The predicted increases due to the development are small in comparison. The CL is met in 2040, with the Proposed Development.

West Blean and Thornden Woods SSSI	17	Broadleaved Woodland	2.263	No (2.18 at 0m)	No (1.91 at 0m)	No (1.91 at 0m)	No	No	No	No – The predicted increases due to the development are small in comparison. The CL is met in 2040, with the Proposed Development.
	18	Broadleaved Woodland	2.263	No (2.26 at 0m)	No (1.98 at 0m)	No (1.98 at 0m)	No	No	No	No
	19	Broadleaved Woodland	2.263	No (2.51 at 0m)	No (2.20 at 0m)	No (2.20 at 0m)	No	No	No	No
	20	Broadleaved Woodland	2.263	No (2.50 at 0m)	No (2.19 at 0m)	No (2.19 at 0m)	No	No	No	No
Church//Bossenden Woods Ancient Woodland	21	Broadleaved Woodland	2.263	Yes (0m, 2.67 at 0m, 2.25 at 30m)	Yes (0m, 2.33 at 0m, 2.07 at 10m)	Yes (0m, 2.41 at 0m, 2.10 at 10m)	Yes – up to 10m (3.3% at 0m and 1.3% at 10m).	No	Yes – up to 0m	No	No – The predicted increases due to the development are small in comparison.
	22	Broadleaved Woodland	2.263	Yes (0m, 2.55 at 0m, 2.25 at 30m)	No (2.22 at 0m)	Yes (0m, 2.28 at 0m, 2.08 at 10m)	Yes – up to 0m (2.5% at 0m and 1.2% at 10m).	No	Yes – up to 0m	No
	23	Broadleaved Woodland	2.263	Yes (0m, 2.45 at 0m, 2.26 at 20m)	No (2.22 at 0m)	No (2.18 at 0m)	Yes – up to 0m (1.9% at 0m and 1.0% at 10m).	No	No	No

5.3. SUMMARY OF THE AIR QUALITY MODELLING RESULTS

5.3.1. In some locations the predicted increases in NO_X and NH_3 concentrations and acid deposition due to the Proposed Development (including the proposed Access Strategy) equate to 1% (or more) of the relevant Critical Levels and Loads, respectively. However, as the relevant Critical Levels and Loads are being met in the future with the Proposed Development in place, no significant effects are anticipated.

5.3.2. The Critical Load for N Deposition is predicted to be exceeded within all of the identified designated ecological sites. At the following locations, the change in N deposition exceeds 1% of the relevant CL as result of the Proposed Development (including the proposed Access Strategy) 'alone': Transects 5 and 6 (both Ancient woodlands within Site B), 7 – 11 (all within Park Wood Ancient Woodland), 15 (Ancient Woodland), 16 (Tyler Hill Meadow LNR) and 21 - 23 (Church/Bossenden Woods Ancient Woodland).

5.3.3. Whilst the change in N deposition exceeds 1% of the relevant CL at the above locations, there is an overall reduction in N deposition between the baseline (2019) and 2040 (i.e. when considered 'in-combination') due to future improvements in vehicle emissions and background deposition rates. However, there is the potential for short-term temporary increases in N deposition in one (or more) of interim years, when compared to the baseline (2019). This is because there is a fine balance between forecast traffic growth and the amount of development traffic on the local road network and future improvements, year on year, in vehicle emissions. Without undertaking further modelling for the interim years, we cannot conclude whether, at any point, the increased traffic (background growth and development traffic) would outweigh the forecast year on year improvements in vehicle emissions (and thereby where N deposition would increase compared against the current baseline (2019)).

5.3.4. Notwithstanding the above, with the exception of Transects 4 and 5 (both within the Ancient Woodland within Site B), the Proposed Development is not anticipated to result in a significant delay to future improvements. For Transects 4 and 5 an appropriate mitigation strategy will need to be developed as they are located within the Proposed Development Site Boundary and will be impacted by the new access road. This mitigation will form an integral part of the masterplan moving forwards.

5.3.5. In addition, whilst exceedances of 1% of the CL have been identified at the above designated sites, the quality of the sites themselves and sensitivity to any changes in emissions have not been considered at this stage.

5.3.6. Furthermore, the changes within Blean Complex SAC due to the Proposed Development are small (less than 1% of the relevant CL). Therefore, in the context of Habitats Regulations Assessment (HRA) no Likely Significant Effects (LSE) are anticipated either 'alone' or 'in-combination' with other Plans and Projects.

6. MITIGATION AND RESIDUAL EFFECTS

6.1. CONSTRUCTION PHASE

6.1.1. In order to reduce the effects of emissions to air due to on-site construction activities, the mitigation measures outlined within the IAQM's guidance for 'high risk' sites should be implemented and incorporated into the Construction Environmental Management Plan (CEMP), where appropriate.

6.1.2. The IAQM's construction guidance states that *"in the case of demolition / construction it is assumed that mitigation (secured by planning conditions, legal requirements or required by regulations) will ensure that a potential significant adverse effect will not occur, so the residual effect will normally be 'not significant'."*

6.1.3. In relation to construction traffic and on-site plant it is anticipated that further assessment will be undertaken as part of the air quality assessment that will be submitted with any future planning application for the Site. Notwithstanding this, a number of best practice measures should be implemented including consulting with CCC to establish the most suitable access and haul routes for site traffic, avoiding roads where designated ecological sites are present within 200m of the road edge, where possible, and ensuring that construction vehicles are kept clean (through the use of wheel washers, etc.) and sheeted when on public highways.

6.1.4. With the application of appropriate mitigation, the residual effects of emissions to air from construction traffic and plant on designated ecological sites are likely to be temporary, short-medium term and of negligible significance.

6.2. OPERATIONAL PHASE

6.2.1. As the relevant Critical Levels and Loads for NO_X and NH_3 concentrations and acid deposition are met in 2040 with the Proposed Development operational, no mitigation is considered necessary for these pollutants and the residual effects are considered to be not significant.

6.2.2. The results for N deposition identify a number of sites where the predicted change due to the Proposed Development 'alone' exceeds 1% of the relevant Critical Load. For those located within the Site Boundary a mitigation strategy will be developed as part of any masterplan. For those sites located off-site any potential exceedances are identified as short-term and temporary and are not considered to significantly delay future improvements in N deposition. Given the preliminary nature of this assessment it is considered that further modelling through the Local Plan process along with consideration of the quality and sensitivity of the designated sites themselves will be required to determine if a significant effect would occur.

6.2.3. Notwithstanding the above, the Proposed Development should be designed to promote sustainable modes of transport including the provision of appropriate infrastructure for pedestrians and cyclists. Infrastructure for electric vehicles (EVs) should also be incorporated into the Proposed Development, taking into the account the Government's ban on the sale of petrol and diesel vehicles from 2030 and subsequent effect on the vehicle fleet. The effect of electric vehicles infrastructure within the Proposed Development should be evaluated in the next stage.

6.2.4. A Travel Plan will be prepared to accompany the submission of the planning application which will include a number of measures that are also likely to benefit general air quality within the vicinity of the Site.

6.2.5. Furthermore, CCC will be undertaking a HRA to determine the effects of their emerging Local Plan on Habitats Sites (including Blean Complex SAC). This will include the assessment of the Site as a proposed strategic allocation. Depending on the results of the study, there is the potential that strategic mitigation may be proposed to reduce the effects of the emerging Local Plan on nearby Habitats Sites.

7. SUMMARY AND CONCLUSIONS

7.1.1. An air quality assessment of the potential air quality effects at nearby designated ecological sites has been undertaken. This considered both the construction and operational phases of the Proposed Development including the effects of the proposed Access Strategy.

7.1.2. The assessment of construction phase impacts associated with fugitive dust and particulate matter emissions has been undertaken in line with the relevant IAQM guidance. This identified that there is a Low Risk of dust soiling impacts construction activities. However, through good site practice and the implementation of suitable mitigation measures, the effect of dust releases would be significantly reduced. The residual effects of the construction phase on air quality are considered to be negligible.

7.1.3. The assessment of potential air quality impacts associated with changes in traffic as a result of the operation of the Proposed Development has been completed in line with published methodologies and technical guidance. NOx and NH_3 concentrations and N and acid deposition at the identified designated ecological sites were modelled using the detailed dispersion model ADMS Roads.

7.1.4. The operational phase assessment found:

- That in some locations the predicted increases in NO_X and NH_3 concentrations and acid deposition due to the Proposed Development (including the proposed Access Strategy) exceed 1% of the relevant Critical Levels and Loads, respectively. But, as the relevant Critical Levels and Loads are being met in the future with the Proposed Development in place, no significant effects are anticipated.
- The Critical Load for N Deposition is predicted to be exceeded within all of the identified designated ecological sites.
- At the following locations, the change in N deposition exceeds 1% of the relevant CL as result of the Proposed Development (including the proposed Access Strategy) 'alone': Transects 4, 5 and 6 (Ancient Woodland within Site B), 7 – 11 (all within Park Wood Ancient Woodland), 15 (Ancient Woodland), 16 (Tyler Hill Meadow LNR) and 21 - 23 (Church/Bossenden Woods Ancient Woodland).
- Whilst the change in N deposition exceeds 1% of the relevant CL at the above locations, there is an overall reduction in N deposition between the baseline (2019) and 2040 due to future improvements in vehicle emissions and background deposition rates. With the exception of Transects 4 and 5 (both within the Ancient Woodland within Site B), the Proposed Development is not anticipated to result in a significant delay to future improvements.
- The changes within Blean Complex SAC due to the Proposed Development are small (less than 1% of the relevant CL). Therefore, in the context of Habitats Regulations Assessment (HRA) no Likely Significant Effects (LSE) are anticipated either 'alone' or 'in-combination' with other Plans and Projects.

RECOMMENDATION AND FURTHER WORK

7.1.5. For those locations within the Site Boundary where exceedances of 1% of the CL are predicted 'alone' (i.e. Transects 4, 5 and 6), a mitigation strategy will be required in any event as part of any masterplan as the proposed access strategy effectively places a road through an area of Ancient Woodland. As such, these areas, whilst an issue will need to be considered in any masterplan that comes forwards on the site.

7.1.6. For the remaining locations where exceedances of 1% of the CL are predicted 'alone' (i.e. Transects 7 – 11, 15 – 16 and 21 – 23), there is the potential for short term and temporary effects during the interim years (see Paragraph 5.3.3). However, the changes due to the Proposed Development are not considered to significantly delay future improvements in N deposition.

7.1.7. Given the preliminary nature of this assessment it is considered that further modelling through the Local Plan process along with consideration of the quality and sensitivity of the designated sites themselves to changes in N deposition will be required to determine if a significant effect would occur. Liaison with key stakeholders would also feed into this process. This further work would be undertaken through later stages of the Local Plan process and should not hold up CCC in determining the principle of the development.

Appendix A

GLOSSARY

Term	Definition
AADT Annual Average Daily Traffic	A daily total traffic flow (24 hrs), expressed as a mean daily flow across all 365 days of the year.
Adjustment	Application of a correction factor to modelled results to account for uncertainties in the model
Accuracy	A measure of how well a set of data fits the true value.
Air quality objective	Policy target generally expressed as a maximum ambient concentration to be achieved, either without exception or with a permitted number of exceedances within a specific timescale (see also air quality standard).
Air quality standard	The concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on the assessment of the effects of each pollutant on human health including the effects on sensitive sub groups (see also air quality objective).
Ambient air	Outdoor air in the troposphere, excluding workplace air.
Annual mean	The average (mean) of the concentrations measured for each pollutant for one year.
AQMA	Air Quality Management Area.
Conservative	Tending to over-predict the impact rather than under-predict.
CL	Critical load. This is "*a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge*" (source: http://www.apis.ac.uk/critical-loads-and-critical-levels-guide-data-provided-apis#_Toc279788050)
Critical Level	Critical level. Critical levels are defined as "concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as human beings, plants, ecosystems or materials, may occur according to present knowledge" (source: http://www.apis.ac.uk/critical-loads-and-critical-levels-guide-data-provided-apis#_Toc279788050)
CREAM	Calculator for Road Emissions of AMmonia
Data capture	The percentage of all the possible measurements for a given period that were validly measured.
Defra	Department for Environment, Food and Rural Affairs.
Dust	Dust comprises particles typically in the size range 1-75 micrometres (µm) in aerodynamic diameter and is created through the action of crushing and abrasive forces on materials

Term	Definition
Emission rate	The quantity of a pollutant released from a source over a given period of time.
Exceedance	A period of time where the concentrations of a pollutant is greater than the appropriate air quality standard.
Fugitive emissions	Emissions arising from the passage of vehicles that do not arise from the exhaust system.
HDV/HGV	Heavy Duty Vehicle/Heavy Goods Vehicle.
LAQM	Local Air Quality Management.
Minor roads	Non A roads of Motorways.
Model adjustment	Following model verification, the process by which modelled results are amended. This corrects for systematic error.
N-deposition	Nitrogen deposition
NH_3	Ammonia
NO_2	Nitrogen dioxide.
NO_x	Nitrogen oxides.
PM_{10}	Particulate matter with an aerodynamic diameter of less than 10 micrometres.
$PM_{2.5}$	Particulate matter with an aerodynamic diameter of less than 2.5 micrometres.
Road link	A length of road which is considered to have the same flow of traffic along it. Usually, a link is the road from one junction to the next.
SAC	Special Area of Conservation
Trackout	The transport of dust and dirt from the construction / demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when heavy duty vehicles (HDVs) leave the construction / demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site.
$\mu g/m^3$ micrograms per cubic metre	A measure of concentration in terms of mass per unit volume. A concentration of $1ug/m^3$ means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant.
Uncertainty	A measure, associated with the result of a measurement, which characterizes the range of values within which the true value is expected to lie. Uncertainty is usually expressed as the range within which the true value is expected to lie with a 95% probability, where standard statistical and other procedures have been used to evaluate this figure. Uncertainty

Term	Definition
	is more clearly defined than the closely related parameter 'accuracy', and has replaced it on recent European legislation.
Validation (modelling)	Refers to the general comparison of modelled results against monitoring data carried out by model developers.
Verification (modelling)	Comparison of modelled results versus any local monitoring data at relevant locations.
Verification (modelling)	Comparison of modelled results versus any local monitoring data at relevant locations.

Appendix B

RELEVANT LEGISLATION AND PLANNING POLICY

UK AIR QUALITY STRATEGY

The Government's policy on air quality within the UK is set out in the Air Quality Strategy for England, Scotland, Wales and Northern Ireland (AQS)[30]. The AQS provides a framework for reducing air pollution in the UK with the aim of meeting the requirements of European Union legislation[31].

The AQS also sets standards and objectives for nine key air pollutants to protect health, vegetation and ecosystems. These are benzene (C_6H_6), 1,3 butadiene (C_4H_6), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), sulphur dioxide (SO_2), ozone (O_3), and polycyclic aromatic hydrocarbons (PAHs).

The air quality standards are levels recommended by the Expert Panel on Air Quality Standards (EPAQS) and the World Health Organisation (WHO) with regards to current scientific knowledge about the effects of each pollutant on health and the environment.

Many of the objectives in the AQS have been made statutory in England with the Air Quality (England) Regulations 2000[32] and the Air Quality (England) (Amendment) Regulations 2002[33] for the purpose of Local Air Quality Management (LAQM).

The Air Quality Standards Regulations 2010[34] transpose the European Union Ambient Air Quality Directive (2008/50/EC) into law in England.

The relevant objectives for NO_X are provided in the table below.

National air quality objectives and European Directive limit and target values for the protection of vegetation and ecosystems

Pollutant	Applies to	Objective	Measured as	Date to be achieved by (and maintained thereafter)	European Obligations	Date to be achieved by (and maintained thereafter)
Nitrogen Oxide (NO_X)	UK	30µg/m^3	Annual mean	31 December 2000	30µg/m^3	19 July 2001

[A] Measured using the European gravimetric transfer sampler or equivalent

[30] Department for Environment, Food and Rural Affairs (Defra) and the Devolved Administrations (2007). The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volumes 1 and 2)

[31] The UK formally left the EU on 31st January 2020 and new air quality legislation for the UK will be brought forward in due course. The Air Quality (Miscellaneous Amendment and Revocation of Retained Direct EU Legislation) (EU Exit) Regulations 2018 (SI 2018/1407) (see Regulation 5) makes changes to retained direct EU legislation relating to air quality, to ensure that it continues to operate effectively.

[32] The Air Quality (England) Regulations 2000 - Statutory Instrument 2000 No.928

[33] The Air Quality (England) (Amendment) Regulations 2002- Statutory Instrument 2002 No.3043

[34] The Air Quality Standards Regulations 2010 - Statutory Instrument 2010 No. 1001

CLEAN AIR STRATEGY

Defra published the Government's Clean Air Strategy in 2019[35]. This sets out measures, which aim to reduce emissions from all sources of air pollution, making air healthier to breathe, protecting nature and boosting the economy. The Strategy also proposes tough new goals to cut public exposure to airborne particulate matter, as per the recommendation made by the World Health Organisation.

Furthermore, the Strategy confirms that the Government will set new legislation to 'create a stronger and a more coherent framework for action to tackle air pollution. This will be underpinned by new England-wide powers to control major sources of air pollution, in line with the risk they pose to public health and the environment, plus new local powers to take action in areas with an air pollution problem.

NATIONAL PLANNING POLICY FRAMEWORK

The Government's overall planning policies for England are described in the National Planning Policy Framework[36]. The core underpinning principle of the Framework is the presumption in favour of sustainable development, defined as:

- *'… meeting the needs of the present without compromising the ability of future generations to meet their own needs'.*

One of the three overarching objectives of the NPPF is that the planning system should seek '*to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.*'

In relation to air quality, the following paragraphs in the document are relevant:

- Paragraph 55, which states '*Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition.*';
- Paragraph 104, which relates to the need to consider transport related issues at the earliest stages of plan making and development proposals, so that *'…c) opportunities to promote walking, cycling and public transport use are identified and pursued; d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains...*';
- Paragraph 105, which states '…*Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice*

[35] Defra (January, 2019). Clean Air Strategy 2019.

[36] Ministry of Housing, Communities and Local Government (July 2021) *National Planning Policy Framework*.

of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health….';

- Paragraph 174, which states '*Planning policies and decisions should contribute to and enhance the natural and local environment by: …e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans...'*;
- Paragraph 185, which states '*Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development….*'; and
- Paragraph 188, which states '*The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.'*

Appendix C

IAQM CONSTRUCTION IMPACT ASSESSMENT METHODOLOGY

STEP 1 – SCREENING THE NEED FOR A DETAILED ASSESSMENT

An assessment will normally be required where there are:

- 'Human receptors' within 350m of the site boundary; or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s); and/or
- 'Ecological receptors' within 50m of the site boundary; or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).

Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is "negligible".

STEP 2A – DEFINE THE POTENTIAL DUST EMISSION MAGNITUDE

The following are examples of how the potential dust emission magnitude for different activities can be defined. (Note that not all the criteria need to be met for a particular class). Other criteria may be used if justified in the assessment.

Table 2A: Definitions of Dust Emission Magnitudes

Dust Emission Magnitude	Activity
Large	Demolition >50,000m^3 building demolished, dusty material (e.g. concrete), on-site crushing/screening, demolition >20m above ground level
	Earthworks >10,000m^2 site area, dusty soil type (e.g. clay), >10 earth moving vehicles active simultaneously, >8m high bunds formed, >100,000 tonnes material moved
	Construction >100,000m^3 building volume, on site concrete batching, sandblasting
	Trackout >50 HDVs out / day, dusty surface material (e.g. clay), >100m unpaved roads
Medium	Demolition 20,000 - 50,000m^3 building demolished, dusty material (e.g. concrete) 10-20m above ground level
	Earthworks 2,500 - 10,000m^2 site area, moderately dusty soil (e.g. silt), 5-10 earth moving vehicles active simultaneously, 4m - 8m high bunds, 20,000 -100,000 tonnes material moved
	Construction 25,000 - 100,000m^3 building volume, dusty material e.g. concrete, on site concrete batching

Dust Emission Magnitude	Activity
	Trackout 10 - 50 HDVs out / day, moderately dusty surface material (e.g. clay), 50 -100m unpaved roads
Small	Demolition <20,000m^3 building demolished, non-dusty material (e.g metal cladding), <10m above ground level, work during wetter months
	Earthworks <2,500m^2 site area, soil with large grain size (e.g. sand), <5 earth moving vehicles active simultaneously, <4m high bunds, <20,000 tonnes material moved, earthworks during wetter months
	Construction <25,000m^3, non-dusty material (e.g. metal cladding or timber)
	Trackout <10 HDVs out / day, non-dusty soil, < 50m unpaved roads

STEP 2B – DEFINE THE SENSITIVITY OF THE AREA

The tables below present the IAQM assessment methodology to determine the sensitivity of the area to dust soiling, human health and ecological impacts respectively. The IAQM guidance provides guidance to allow the sensitivity of individual receptors to dust soiling and health effects to assist in the assessment of the overall sensitivity of the study area.

Table 2Ba: Sensitivity of the Area to Dust Soiling Effects

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table 2Bb: Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM_{10} Concentration ($\mu g/m^3$)	Number of Receptors	Distance from the Source (m)				
			<20	<50	<100	<200	<350
High	>32	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28-32	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24-28	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	>32	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	28-32	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	24-28	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<24	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

Table 2Bc: Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from the Sources (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

STEP 2C – DEFINE THE RISK OF IMPACTS

The dust emissions magnitude determined at Step 2A should be combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts without mitigation applied. For those cases where the risk category is 'negligible' no mitigation measures beyond those required by legislation will be required.

Table 2C: Risk of Dust Impacts

Sensitivity of surrounding area	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks and Construction			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Trackout			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

STEP 3 –SITE SPECIFIC MITIGATION

Having determined the risk categories for each of the four activities it is possible to determine the site-specific measures to be adopted. These measures will be related to whether the site is considered to be a low, medium or high risk site. The IAQM guidance details the mitigation measures required for high, medium and low risk sites as determined in Step 2C.

STEP 4 – DETERMINE SIGNIFICANT EFFECTS

Once the risk of dust impacts has been determined in Step 2C and the appropriate dust mitigation measures identified in Step 3, the final step is to determine whether there are significant effects arising from the construction phase. For almost all construction activities, the application of effective mitigation should prevent any significant effects occurring to sensitive receptors and therefore the residual effect will normally be negligible.

Appendix D

CRITICAL LEVELS AND CRITICAL LOADS

Critical Levels and Critical Loads for Designated Sites

The Blean Complex SAC site interest feature that is sensitive to changes in NO_x, NH_3 and N-deposition is given by APIS as 'Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli* (H9160)'. The relevant lower Critical Load for N-deposition is 15kg/ha/yr.

The West Blean And Thornden Woods SSSI site interest feature that is sensitive to changes in NO_x, NH_3 and N-deposition is given by APIS as 'Acidophilous Quercus-dominated woodland'. The relevant lower Critical Load for N-deposition is 10kg/ha/yr.

For Tyler Hill Meadow LNR, the main habitat is neutral grassland, and the relevant lower Critical Load for N-deposition is 20 - 30 Kg N/ha/year (Low and medium altitude hay meadows).

The Critical Load for woodland habitats in the UK has been defined to be within a wide range of 5–20kg N/ha/yr, depending on woodland vegetation types. There are more specific Critical Load ranges where information is available to assign vegetation types (e.g. acidic oak-birch woods, beech or native pine woods). Where information is unavailable to determine woodland vegetation types, the default value for woodland habitats is considered to be 10kg N/ha/yr[37].

Details of site relevant Critical Levels and Critical Loads for ecological receptors are listed in the table below.

Critical Levels and Critical Loads for Ecological Receptors

Name	Habitat	NOx Critical Level	NH_3 Critical Level	N-deposition Lower Critical (kg/ha/yr)	Acid deposition Lower Critical Load? (keq/ha/yr)
Blean Complex SAC	Broad-leaved, Mixed and yew woodland	30	3 (Higher plans including heathland, grassland and forest ground flora)	15 (Meso- and eutrophic Quercus woodland)	2.86
West Blean And Thornden Woods SSSI	Broad-leaved, Mixed and yew woodland	30	3 (Higher plans including heathland, grassland and forest ground flora)	10 (Woodland)	2.263
Tyler Hill Meadow LNR	Broad-leaved, Mixed and yew woodland	30	3 (Higher plans including heathland, grassland and forest ground flora)	20-30 (neutral grassland)	5.071

[37] https://www.woodlandtrust.org.uk/media/1687/ammonia-impacts-on-ancient-woodland.pdf

Name	Habitat	NOx Critical Level	NH_3 Critical Level	N-deposition Lower Critical (kg/ha/yr)	Acid deposition Lower Critical Load? (keq/ha/yr)
Ancient Woodland	Broad-leaved, Mixed and yew woodland	30	3 (Higher plans including heathland, grassland and forest ground flora)	10 (Woodland)	2.263

Appendix E

TRAFFIC DATA

2019 BASELINE

Road Link	Road Name	AADT	% HDV	Speed (kph)	NOx Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_1	Canterbury Hill south of Giles Lane	9368	0.9	48	0.0283	0.0026
Link_2	roundabout	10319	3.7	20	0.0494	0.0031
Link_3	roundabout	14885	3.8	20	0.0715	0.0045
Link_4	roundabout	22582	3.1	20	0.1050	0.0067
Link_5	roundabout	17397	3.2	20	0.0813	0.0052
Link_6	Development access road (onto Whitstable Road)	0	0.0	48	0.0000	0.0000
Link_7	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. West)	0	0.0	0	0.0000	0.0000
Link_8	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. East)	0	0.0	0	0.0000	0.0000
Link_9	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from North)	0	0.0	0	0.0000	0.0000
Link_10	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from South)	0	0.0	0	0.0000	0.0000
Link_11	A290 Whitstable Road (north of Tyler Hill Road)	8901	6.1	48	0.0306	0.0029
Link_12	Park Wood Road west of Giles Lane	4178	1.4	32	0.0149	0.0012
Link_13	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	8969	3.0	48	0.0286	0.0027

Road Link	Road Name	AADT	% HDV	Speed (kph)	NOx Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_14	A290 Whitstable Road (Between Rough Common Road and access junction)	10132	2.5	48	0.0319	0.0030
Link_15	A290 St Dunstan's Street (between London Road and Forty Acres Road)	8892	4.0	48	0.0290	0.0027
Link_16	London Road (west of Whitstable Road)	8585	4.0	32	0.0337	0.0026
Link_17	Rough Common Road (west of Whitstable Road)	9013	0.9	48	0.0272	0.0025
Link_87	Rough Common Road (west of Whitstable Road)	9013	0.9	48	0.0272	0.0025
Link_19	A2050 west of Palmers Cross Hill	17414	3.5	80	0.0519	0.0053
Link_20	A2050 east of Palmers Cross Hill	15949	3.6	80	0.0476	0.0048
Link_21	Giles Lane east of Whitstable Road	3916	0.4	48	0.0117	0.0011
Link_22	University Road south of Giles Lane	3770	3.5	32	0.0148	0.0011
Link_23	University Road north of Whitstable Road	4743	5.8	48	0.0162	0.0015
Link_24	Calais Hill west of Canterbury Hill	1177	0.9	64	0.0033	0.0003
Link_25	St. Stephen's Hill north of Beaconsfield Road	8717	1.2	48	0.0265	0.0025
Link_26	Beaconsfield Road south of St Stephen's Hill	5618	0.9	48	0.0170	0.0016

Road Link	Road Name	AADT	% HDV	Speed (kph)	NOx Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_27	St Stephen's Road west of St Stephen's Roundabout	13190	0.5	48	0.0394	0.0036
Link_28	St Stephen's Road north of St Stephen's Roundabout	8084	1.1	48	0.0245	0.0023
Link_29	Kingsmead Road south of St Stephen's Roundabout	13887	2.5	48	0.0437	0.0041
Link_30	A2050	26547	3.8	64	0.0788	0.0081
Link_31	A290	38634	3.3	64	0.1137	0.0116
Link_32	A290	16032	2.0	32	0.0585	0.0046
Link_33	roundabout	12619	3.8	20	0.0606	0.0038
Link_34	roundabout	20547	3.2	20	0.0960	0.0061
Link_35	A2050 west of Palmers Cross Hill	17414	3.5	80	0.0519	0.0053
Link_36	A2050 east of Palmers Cross Hill	15949	3.6	80	0.0476	0.0048
Link_37	A2050 east of Palmers Cross Hill	15949	3.6	80	0.0476	0.0048
Link_38	A2050	26547	3.8	64	0.0788	0.0081
Link_39	A2050	26547	3.8	64	0.0788	0.0081
Link_40	London Road (west of Whitstable Road)	8585	4.0	32	0.0337	0.0026
Link_41	London Road (west of Whitstable Road)	8585	4.0	32	0.0337	0.0026
Link_42	Palmers Cross Hill	8537	0.7	48	0.0256	0.0024

Road Link	Road Name	AADT	% HDV	Speed (kph)	NOx Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_43	Rough Common Road (west of Whitstable Road)	9013	0.9	48	0.0272	0.0025
Link_44	A290	38634	3.3	64	0.1137	0.0116
Link_45	A290	16032	2.0	32	0.0585	0.0046
Link_46	A290 St Thomas Hill (between University Road and Forty Acres Road)	9028	4.7	48	0.0300	0.0028
Link_47	University Road north of Whitstable Road	4743	5.8	48	0.0162	0.0015
Link_48	University Road south of Giles Lane	3770	3.5	32	0.0145	0.0011
Link_49	Giles Lane east of Whitstable Road	3916	0.4	48	0.0117	0.0011
Link_50	Giles Lane east of Whitstable Road	3916	0.4	48	0.0117	0.0011
Link_51	Park Wood Road west of Giles Lane	4178	1.4	32	0.0149	0.0012
Link_52	Park Wood Road west of Giles Lane	4178	1.4	32	0.0149	0.0012
Link_53	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	8969	3.0	48	0.0286	0.0027
Link_54	St. Stephen's Hill north of Beaconsfield Road	8717	1.2	48	0.0265	0.0025
Link_55	St Stephen's Road north of St Stephen's Roundabout	8084	1.1	48	0.0245	0.0023
Link_56	Beaconsfield Road south of St Stephen's Hill	5618	0.9	48	0.0170	0.0016

Road Link	Road Name	AADT	% HDV	Speed (kph)	NOx Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_57	St Stephen's Road north of St Stephen's Roundabout	8084	1.1	48	0.0245	0.0023
Link_58	St Stephen's Road west of St Stephen's Roundabout	13190	0.5	48	0.0394	0.0036
Link_59	Kingsmead Road south of St Stephen's Roundabout	13887	2.5	48	0.0437	0.0041
Link_60	Canterbury Hill south of Giles Lane	9368	0.9	48	0.0283	0.0026
Link_61	Canterbury Hill north of Giles Lane	8678	0.7	64	0.0243	0.0024
Link_62	Tyler Hill Road (east of A290 Whitstable Road)	1415	1.1	48	0.0043	0.0004
Link_63	Calais Hill west of Canterbury Hill	1177	0.9	64	0.0033	0.0003
Link_64	Development access road (onto Whitstable Road)	0	0.0	48	0.0000	0.0000
Link_65	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. West)	0	0.0	0	0.0000	0.0000
Link_66	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. East)	0	0.0	0	0.0000	0.0000
Link_67	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from South)	0	0.0	0	0.0000	0.0000
Link_68	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from South)	0	0.0	0	0.0000	0.0000

Road Link	Road Name	AADT	% HDV	Speed (kph)	NOx Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_69	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from North)	0	0.0	0	0.0000	0.0000
Link_70	A290 Whitstable Road (between access junction and Giles Lane)	9835	2.1	48	0.0306	0.0029
Link_71	A290 Whitstable Road (between Giles Lane and University Road)	7257	2.6	48	0.0229	0.0021
Link_72	A290 St Thomas Hill (between University Road and Forty Acres Road)	9028	4.7	48	0.0300	0.0028
Link_73	A290 St Dunstan's Street (between London Road and Forty Acres Road)	8892	4.0	48	0.0290	0.0027
Link_74	Tyler Hill Road (east of A290 Whitstable Road)	1415	1.1	48	0.0043	0.0004
Link_90	Wood Hill north of Calais Hill	7578	0.9	48	0.0230	0.0021
Link_76	Canterbury Hill north of Giles Lane	8678	0.7	64	0.0243	0.0024
Link_77	Kingsmead Road south of St Stephen's Roundabout	13887	2.5	48	0.0437	0.0041
Link_78	St Stephen's Road west of St Stephen's Roundabout	13190	0.5	48	0.0394	0.0036
Link_79	A2050 west of Palmers Cross Hill	17414	3.5	80	0.0519	0.0053
Link_80	A2050 east of Palmers Cross Hill	15949	3.6	80	0.0476	0.0048
Link_81	A2050 east of Palmers Cross Hill	15949	3.6	80	0.0476	0.0048

Road Link	Road Name	AADT	% HDV	Speed (kph)	NOx Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_82	A2050 east of Palmers Cross Hill	15949	3.6	80	0.0476	0.0048
Link_83	A290	16032	2.0	32	0.0585	0.0046
Link_84	A290	16032	2.0	32	0.0585	0.0046
Link_85	A290 St Thomas Hill (between University Road and Forty Acres Road)	9028	4.7	48	0.0300	0.0028
Link_89	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	8969	3.0	48	0.0293	0.0027
Link_18	Palmers Cross Hill	8537	0.7	48	0.0256	0.0024
Link_88	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	8969	3.0	48	0.0294	0.0027
Link_86	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	8969	3.0	48	0.0286	0.0027
Link_75	Wood Hill north of Calais Hill	7578	0.9	48	0.0229	0.0021
Link_91	Giles Lane east of Whitstable Road	3916	0.4	48	0.0117	0.0011
Link_92	Giles Lane east of Whitstable Road	3916	0.4	48	0.0117	0.0011

2040 BASELINE

Road Link	Road Name	AADT	% HDV	Speed (kph)	NO_x Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_1	Canterbury Hill south of Giles Lane	10896	0.9	48	0.01293	0.0036
Link_2	roundabout	12001	3.7	20	0.02214	0.0043
Link_3	roundabout	17311	3.8	20	0.03207	0.0062
Link_4	roundabout	26263	3.1	20	0.04727	0.0092
Link_5	roundabout	20233	3.2	20	0.03657	0.0071
Link_6	Development access road (onto Whitstable Road)	0	0.0	48	-	-
Link_7	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. West)	0	0.0	0	-	-
Link_8	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. East)	0	0.0	0	-	-
/Link_9	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from North)	0	0.0	0	-	-
Link_10	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from South)	0	0.0	0	-	-
Link_11	A290 Whitstable Road (north of Tyler Hill Road)	10353	6.1	48	0.01346	0.0039
Link_12	Park Wood Road west of Giles Lane	4859	1.4	32	0.00680	0.0016
Link_13	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	10432	3.0	48	0.01286	0.0036

Road Link	Road Name	AADT	% HDV	Speed (kph)	NO_x Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_14	A290 Whitstable Road (Between Rough Common Road and access junction)	11784	2.5	48	0.01440	0.0041
Link_15	A290 St Dunstan's Street (between London Road and Forty Acres Road)	10341	4.0	48	0.01296	0.0037
Link_16	London Road (west of Whitstable Road)	9985	4.0	32	0.01506	0.0036
Link_17	Rough Common Road (west of Whitstable Road)	10483	0.9	48	0.01244	0.0035
Link_87	Rough Common Road (west of Whitstable Road)	10483	0.9	48	0.01244	0.0035
Link_19	A2050 west of Palmers Cross Hill	20252	3.5	80	0.02274	0.0071
Link_20	A2050 east of Palmers Cross Hill	18550	3.6	80	0.02083	0.0066
Link_21	Giles Lane east of Whitstable Road	4554	0.4	48	0.00536	0.0015
Link_22	University Road south of Giles Lane	4384	3.5	32	0.00710	0.0016
Link_23	University Road north of Whitstable Road	5516	5.8	48	0.00714	0.0021
Link_24	Calais Hill west of Canterbury Hill	1369	0.9	64	0.00151	0.0005
Link_25	St. Stephen's Hill north of Beaconsfield Road	10138	1.2	48	0.01209	0.0034
Link_26	Beaconsfield Road south of St Stephen's Hill	6534	0.9	48	0.00776	0.0022

Road Link	Road Name	AADT	% HDV	Speed (kph)	NO_x Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_27	St Stephen's Road west of St Stephen's Roundabout	15341	0.5	48	0.01808	0.0050
Link_28	St Stephen's Road north of St Stephen's Roundabout	9402	1.1	48	0.01119	0.0031
Link_29	Kingsmead Road south of St Stephen's Roundabout	16151	2.5	48	0.01973	0.0056
Link_30	A2050	30875	3.8	64	0.03502	0.0110
Link_31	A290	44932	3.3	64	0.05076	0.0158
Link_32	A290	18646	2.0	32	0.02652	0.0063
Link_33	roundabout	14677	3.8	20	0.02719	0.0052
Link_34	roundabout	23896	3.2	20	0.04319	0.0084
Link_35	A2050 west of Palmers Cross Hill	20252	3.5	80	0.02274	0.0071
Link_36	A2050 east of Palmers Cross Hill	18550	3.6	80	0.02083	0.0066
Link_37	A2050 east of Palmers Cross Hill	18550	3.6	80	0.02083	0.0066
Link_38	A2050	30875	3.8	64	0.03502	0.0110
Link_39	A2050	30875	3.8	64	0.03502	0.0110
Link_40	London Road (west of Whitstable Road)	9985	4.0	32	0.01506	0.0036
Link_41	London Road (west of Whitstable Road)	9985	4.0	32	0.01506	0.0036
Link_42	Palmers Cross Hill	9928	0.7	48	0.01174	0.0032

Road Link	Road Name	AADT	% HDV	Speed (kph)	NO_x Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_43	Rough Common Road (west of Whitstable Road)	10483	0.9	48	0.01244	0.0035
Link_44	A290	44932	3.3	64	0.05076	0.0158
Link_45	A290	18646	2.0	32	0.02652	0.0063
Link_46	A290 St Thomas Hill (between University Road and Forty Acres Road)	10500	4.7	48	0.01332	0.0038
Link_47	University Road north of Whitstable Road	5516	5.8	48	0.00714	0.0021
Link_48	University Road south of Giles Lane	4384	3.5	32	0.00652	0.0016
Link_49	Giles Lane east of Whitstable Road	4554	0.4	48	0.00536	0.0015
Link_50	Giles Lane east of Whitstable Road	4554	0.4	48	0.00536	0.0015
Link_51	Park Wood Road west of Giles Lane	4859	1.4	32	0.00680	0.0016
Link_52	Park Wood Road west of Giles Lane	4859	1.4	32	0.00680	0.0016
Link_53	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	10432	3.0	48	0.01286	0.0036
Link_54	St. Stephen's Hill north of Beaconsfield Road	10138	1.2	48	0.01209	0.0034
Link_55	St Stephen's Road north of St Stephen's Roundabout	9402	1.1	48	0.01119	0.0031
Link_56	Beaconsfield Road south of St Stephen's Hill	6534	0.9	48	0.00776	0.0022

Road Link	Road Name	AADT	% HDV	Speed (kph)	NO_x Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_57	St Stephen's Road north of St Stephen's Roundabout	9402	1.1	48	0.01119	0.0031
Link_58	St Stephen's Road west of St Stephen's Roundabout	15341	0.5	48	0.01808	0.0050
Link_59	Kingsmead Road south of St Stephen's Roundabout	16151	2.5	48	0.01973	0.0056
Link_60	Canterbury Hill south of Giles Lane	10896	0.9	48	0.01293	0.0036
Link_61	Canterbury Hill north of Giles Lane	10092	0.7	64	0.01111	0.0033
Link_62	Tyler Hill Road (east of A290 Whitstable Road)	1646	1.1	48	0.00197	0.0005
Link_63	Calais Hill west of Canterbury Hill	1369	0.9	64	0.00151	0.0005
Link_64	Development access road (onto Whitstable Road)	0	0.0	48	-	-
Link_65	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. West)	0	0.0	0	-	-
Link_66	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. East)	0	0.0	0	-	-
Link_67	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from South)	0	0.0	0	-	-
Link_68	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from South)	0	0.0	0	-	-

Road Link	Road Name	AADT	% HDV	Speed (kph)	NO_x Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_69	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from North)	0	0.0	0	-	-
Link_70	A290 Whitstable Road (between access junction and Giles Lane)	11439	2.1	48	0.01388	0.0039
Link_71	A290 Whitstable Road (between Giles Lane and University Road)	8440	2.6	48	0.01034	0.0029
Link_72	A290 St Thomas Hill (between University Road and Forty Acres Road)	10500	4.7	48	0.01332	0.0038
Link_73	A290 St Dunstan's Street (between London Road and Forty Acres Road)	10341	4.0	48	0.01296	0.0037
Link_74	Tyler Hill Road (east of A290 Whitstable Road)	1646	1.1	48	0.00197	0.0005
Link_90	Wood Hill north of Calais Hill	8814	0.9	48	0.01069	0.0029
Link_76	Canterbury Hill north of Giles Lane	10092	0.7	64	0.01111	0.0033
Link_77	Kingsmead Road south of St Stephen's Roundabout	16151	2.5	48	0.01973	0.0056
Link_78	St Stephen's Road west of St Stephen's Roundabout	15341	0.5	48	0.01808	0.0050
Link_79	A2050 west of Palmers Cross Hill	20252	3.5	80	0.02274	0.0071
Link_80	A2050 east of Palmers Cross Hill	18550	3.6	80	0.02083	0.0066
Link_81	A2050 east of Palmers Cross Hill	18550	3.6	80	0.02083	0.0066

Road Link	Road Name	AADT	% HDV	Speed (kph)	NO_x Emission Factors (g/km/s)	NH_3 Emission Factors (g/km/s)
Link_82	A2050 east of Palmers Cross Hill	18550	3.6	80	0.02083	0.0066
Link_83	A290	18646	2.0	32	0.02652	0.0063
Link_84	A290	18646	2.0	32	0.02652	0.0063
Link_85	A290 St Thomas Hill (between University Road and Forty Acres Road)	10500	4.7	48	0.01332	0.0038
Link_89	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	10432	3.0	48	0.01379	0.0036
Link_18	Palmers Cross Hill	9928	0.7	48	0.01174	0.0032
Link_88	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	10432	3.0	48	0.01370	0.0036
Link_86	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	10432	3.0	48	0.01286	0.0036
Link_75	Wood Hill north of Calais Hill	8814	0.9	48	0.01046	0.0029
Link_91	Giles Lane east of Whitstable Road	4554	0.4	48	0.00536	0.0015
Link_92	Giles Lane east of Whitstable Road	4554	0.4	48	0.00536	0.0015

2040 WITH DEVELOPMENT

Road Link	Road Name	AADT	% HDV	Speed (kph)	2030 NO_x Emission Factors (g/km/s)	2035 NH_3 Emission Factors (g/km/s)
Link_1	Canterbury Hill south of Giles Lane	12439	0.8	48	0.01474	0.0041
Link_2	roundabout	12147	3.7	20	0.02241	0.0043
Link_3	roundabout	17335	3.8	20	0.03211	0.0062
Link_4	roundabout	26263	3.1	20	0.04727	0.0092
Link_5	roundabout	20233	3.2	20	0.03657	0.0071
Link_6	Development access road (onto Whitstable Road)	3374	0.0	48	0.00394	0.0011
Link_7	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. West)	1413	0.0	48	0.00165	0.0005
Link_8	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. East)	1316	0.0	48	0.00154	0.0004
Link_9	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from North)	2139	0.0	48	0.00250	0.0007
Link_10	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from South)	855	0.0	48	0.00100	0.0003
Link_11	A290 Whitstable Road (north of Tyler Hill Road)	11658	5.4	48	0.01498	0.0043
Link_12	Park Wood Road west of Giles Lane	5277	1.3	32	0.00736	0.0018
Link_13	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	11852	2.7	48	0.01452	0.0041

Road Link	Road Name	AADT	% HDV	Speed (kph)	2030 NO_x Emission Factors (g/km/s)	2035 NH_3 Emission Factors (g/km/s)
Link_14	A290 Whitstable Road (Between Rough Common Road and access junction)	14443	2.1	48	0.01751	0.0049
Link_15	A290 St Dunstan's Street (between London Road and Forty Acres Road)	12570	3.3	48	0.01556	0.0044
Link_16	London Road (west of Whitstable Road)	9985	4.0	32	0.01506	0.0036
Link_17	Rough Common Road (west of Whitstable Road)	12372	0.8	48	0.01465	0.0041
Link_87	Rough Common Road (west of Whitstable Road)	12372	0.8	48	0.01465	0.0041
Link_19	A2050 west of Palmers Cross Hill	21755	3.2	80	0.02440	0.0076
Link_20	A2050 east of Palmers Cross Hill	18936	3.5	80	0.02126	0.0067
Link_21	Giles Lane east of Whitstable Road	4554	0.4	48	0.00536	0.0015
Link_22	University Road south of Giles Lane	4384	3.5	32	0.00710	0.0016
Link_23	University Road north of Whitstable Road	5516	5.8	48	0.00714	0.0021
Link_24	Calais Hill west of Canterbury Hill	2912	0.4	64	0.00320	0.0009
Link_25	St. Stephen's Hill north of Beaconsfield Road	11755	1.0	48	0.01398	0.0039
Link_26	Beaconsfield Road south of St Stephen's Hill	6789	0.9	48	0.00806	0.0022
Link_27	St Stephen's Road west of St Stephen's Roundabout	15886	0.5	48	0.01872	0.0052

Road Link	Road Name	AADT	% HDV	Speed (kph)	2030 NO_x Emission Factors (g/km/s)	2035 NH_3 Emission Factors (g/km/s)
Link_28	St Stephen's Road north of St Stephen's Roundabout	11008	0.9	48	0.01307	0.0036
Link_29	Kingsmead Road south of St Stephen's Roundabout	17322	2.3	48	0.02110	0.0059
Link_30	A2050	30875	3.8	64	0.03502	0.0110
Link_31	A290	44932	3.3	64	0.05076	0.0158
Link_32	A290	18646	2.0	32	0.02652	0.0063
Link_33	roundabout	14798	3.7	20	0.02730	0.0053
Link_34	roundabout	23896	3.2	20	0.04319	0.0084
Link_35	A2050 west of Palmers Cross Hill	21755	3.2	80	0.02440	0.0076
Link_36	A2050 east of Palmers Cross Hill	18936	3.5	80	0.02126	0.0067
Link_37	A2050 east of Palmers Cross Hill	18936	3.5	80	0.02126	0.0067
Link_38	A2050	30875	3.8	64	0.03502	0.0110
Link_39	A2050	30875	3.8	64	0.03502	0.0110
Link_40	London Road (west of Whitstable Road)	9985	4.0	32	0.01506	0.0036
Link_41	London Road (west of Whitstable Road)	9985	4.0	32	0.01506	0.0036
Link_42	Palmers Cross Hill	11818	0.6	48	0.01394	0.0039
Link_43	Rough Common Road (west of Whitstable Road)	12372	0.8	48	0.01465	0.0041
Link_44	A290	44932	3.3	64	0.05076	0.0158

Road Link	Road Name	AADT	% HDV	Speed (kph)	2030 NO_x Emission Factors (g/km/s)	2035 NH_3 Emission Factors (g/km/s)
Link_45	A290	18646	2.0	32	0.02652	0.0063
Link_46	A290 St Thomas Hill (between University Road and Forty Acres Road)	12782	3.8	48	0.01599	0.0046
Link_47	University Road north of Whitstable Road	5516	5.8	48	0.00714	0.0021
Link_48	University Road south of Giles Lane	4384	3.5	32	0.00652	0.0016
Link_49	Giles Lane east of Whitstable Road	4554	0.4	48	0.00536	0.0015
Link_50	Giles Lane east of Whitstable Road	4554	0.4	48	0.00536	0.0015
Link_51	Park Wood Road west of Giles Lane	5277	1.3	32	0.00736	0.0018
Link_52	Park Wood Road west of Giles Lane	5277	1.3	32	0.00736	0.0018
Link_53	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	11852	2.7	48	0.01452	0.0041
Link_54	St. Stephen's Hill north of Beaconsfield Road	11755	1.0	48	0.01398	0.0039
Link_55	St Stephen's Road north of St Stephen's Roundabout	11008	0.9	48	0.01307	0.0036
Link_56	Beaconsfield Road south of St Stephen's Hill	6789	0.9	48	0.00806	0.0022
Link_57	St Stephen's Road north of St Stephen's Roundabout	11008	0.9	48	0.01307	0.0036
Link_58	St Stephen's Road west of St Stephen's Roundabout	15886	0.5	48	0.01872	0.0052

Road Link	Road Name	AADT	% HDV	Speed (kph)	2030 NO_x Emission Factors (g/km/s)	2035 NH_3 Emission Factors (g/km/s)
Link_59	Kingsmead Road south of St Stephen's Roundabout	17322	2.3	48	0.02110	0.0059
Link_60	Canterbury Hill south of Giles Lane	12439	0.8	48	0.01474	0.0041
Link_61	Canterbury Hill north of Giles Lane	11636	0.6	64	0.01280	0.0038
Link_62	Tyler Hill Road (east of A290 Whitstable Road)	3750	0.5	48	0.00443	0.0012
Link_63	Calais Hill west of Canterbury Hill	2912	0.4	64	0.00320	0.0009
Link_64	Development access road (onto Whitstable Road)	3374	0.0	48	0.00394	0.0011
Link_65	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. West)	1413	0.0	48	0.00165	0.0005
Link_66	Development access road (onto Tyler Hill Road at Tyler Hill Road Junc. East)	1316	0.0	48	0.00154	0.0004
Link_67	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from South)	855	0.0	48	0.00100	0.0003
Link_68	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from South)	855	0.0	48	0.00100	0.0003
Link_69	Development access road (onto Tyler Hill Road at Site B / Tyler Hill Road / Site D junction - from North)	2139	0.0	48	0.00250	0.0007
Link_70	A290 Whitstable Road (between access junction and Giles Lane)	13721	1.8	48	0.01654	0.0046

Road Link	Road Name	AADT	% HDV	Speed (kph)	2030 NO_x Emission Factors (g/km/s)	2035 NH_3 Emission Factors (g/km/s)
Link_71	A290 Whitstable Road (between Giles Lane and University Road)	10723	2.1	48	0.01300	0.0036
Link_72	A290 St Thomas Hill (between University Road and Forty Acres Road)	12782	3.8	48	0.01599	0.0046
Link_73	A290 St Dunstan's Street (between London Road and Forty Acres Road)	12570	3.3	48	0.01556	0.0044
Link_74	Tyler Hill Road (east of A290 Whitstable Road)	3750	0.5	48	0.00443	0.0012
Link_90	Wood Hill north of Calais Hill	8814	0.9	48	0.01069	0.0029
Link_76	Canterbury Hill north of Giles Lane	11636	0.6	64	0.01280	0.0038
Link_77	Kingsmead Road south of St Stephen's Roundabout	17322	2.3	48	0.02110	0.0059
Link_78	St Stephen's Road west of St Stephen's Roundabout	15886	0.5	48	0.01872	0.0052
Link_79	A2050 west of Palmers Cross Hill	21755	3.2	80	0.02440	0.0076
Link_80	A2050 east of Palmers Cross Hill	18936	3.5	80	0.02126	0.0067
Link_81	A2050 east of Palmers Cross Hill	18936	3.5	80	0.02126	0.0067
Link_82	A2050 east of Palmers Cross Hill	18936	3.5	80	0.02126	0.0067
Link_83	A290	18646	2.0	32	0.02652	0.0063
Link_84	A290	18646	2.0	32	0.02652	0.0063

Road Link	Road Name	AADT	% HDV	Speed (kph)	2030 NO_x Emission Factors (g/km/s)	2035 NH_3 Emission Factors (g/km/s)
Link_85	A290 St Thomas Hill (between University Road and Forty Acres Road)	12782	3.8	48	0.01599	0.0046
Link_89	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	11852	2.7	48	0.01545	0.0041
Link_18	Palmers Cross Hill	11818	0.6	48	0.01394	0.0039
Link_88	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	11852	2.7	48	0.01536	0.0041
Link_86	A290 Whitstable Road (Between Rough Common Road and Tyler Hill Road)	11852	2.7	48	0.01452	0.0041
Link_75	Wood Hill north of Calais Hill	8814	0.9	48	0.01046	0.0029
Link_91	Giles Lane east of Whitstable Road	4554	0.4	48	0.00536	0.0015
Link_92	Giles Lane east of Whitstable Road	4554	0.4	48	0.00536	0.0015

Appendix F

MODEL VERIFICATION

The comparison of modelled concentrations with local monitored concentrations is a process termed 'verification'. Model verification investigates the discrepancies between modelled and measured concentrations, which can arise due to the presence of inaccuracies and/or uncertainties in model input data, modelling and monitoring data assumptions. The following are examples of potential causes of such discrepancy:

a) Estimates of background pollutant concentrations;

b) Meteorological data uncertainties;

c) Traffic data uncertainties;

d) Model input parameters, such as 'roughness length'; and

e) Overall limitations of the dispersion model.

NITROGEN DIOXIDE

Most nitrogen dioxide is produced in the atmosphere by the reaction of nitric oxide (NO) with ozone. It is therefore most appropriate to verify the model in terms of the primary pollutant emissions of nitrogen oxides (NO_x = NO + NO_2), in line with the guidance provided within LAQM.TG(16).

The model has been run to predict the 2019 annual mean road-NO_x contribution at five roadside diffusion tubes within the modelled road network. The model outputs of road-NO_x have been compared with the 'measured' road-NO_x, which was determined from the NO_2 concentrations measured using diffusion tubes at the monitoring locations, utilising the NO_x from NO_2 calculator provided by Defra and the NO_2 background concentration (from the Defra background map). As discussed in the methodology section, the most recent suitable data available for model verification purposes is 2019 data.

A number of diffusion tubes were not considered suitable for the purpose of model verification as they were not reflective of the likely conditions (and therefore performance) of the model within the vicinity of the designated ecological sites.

The table below (E1) presents the monitoring data **excluded** in the verification along with justification/the rationale for this decision.

Table E1 – Data excluded in model verification

Monitoring Site	Measured Annual Mean NO_2 Concentration ($\mu g/m^3$)	Data Capture	Justification
DT7	25.2	83.3	Not representative of modelled sites (street canyon) and incomplete network
DT3	32.6	100.0	Incomplete local roads data
DT19	38.8	100.0	Incomplete local roads data
DT20	30.6	66.7	Incomplete local roads data & low data capture

DT21	25.7	91.7	Incomplete local roads data
DT23	44.1	100.0	Incomplete local roads data
DT32	28.1	91.7	Kerbside with one sided canyon on one side. Not representative of modelled sites
DT34	30.7	100.0	Incomplete local roads data
DT36	27.6	83.3	Incomplete local roads data
DT57	30.1	100	Air distribution block with other fixtures on the lamppost

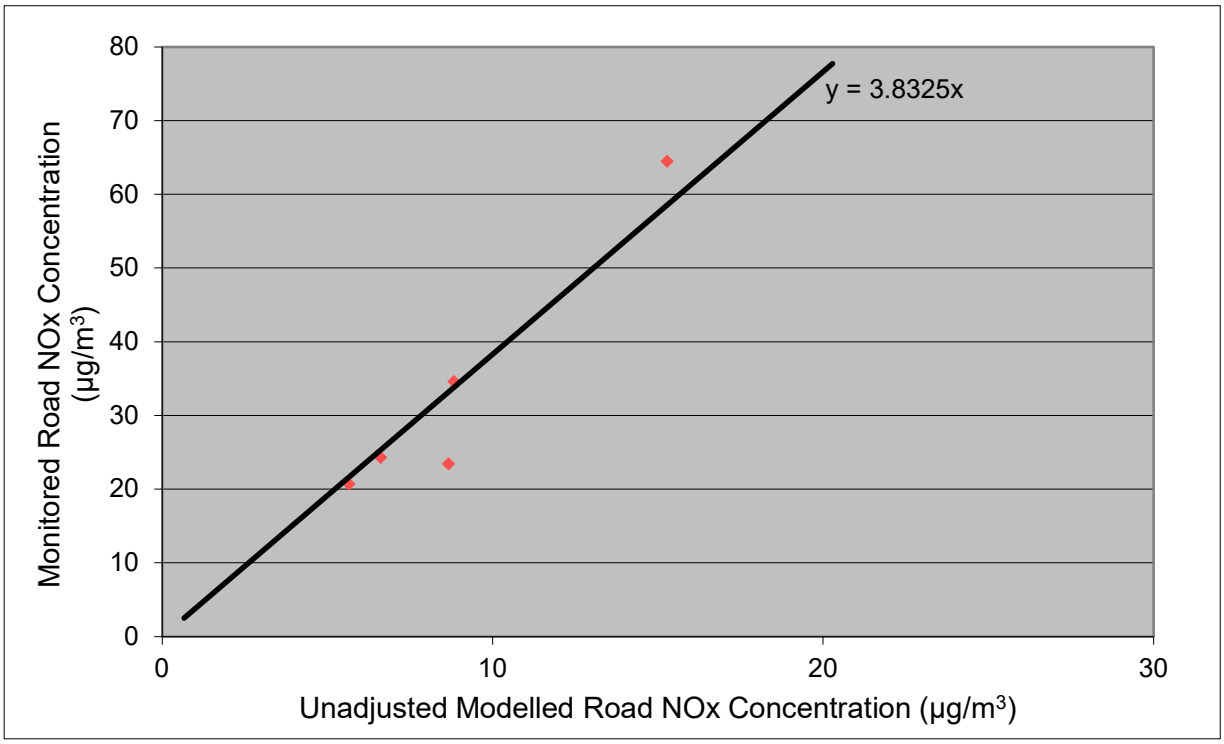
Table E2 presents the monitoring locations utilised within model verification.

Table E2 – Data used in model verification

Monitoring Site	Measured Annual Mean NO_2 Concentration ($\mu g/m^3$)	Background NO_2 ($\mu g/m^3$)	Measured Road-NO_x ($\mu g/m^3$) (from NO_x:NO_2 calculator)	Modelled Road-NO_x ($\mu g/m^3$)	Ratio
DT5	29.6	11.9	34.6	8.8	3.9
DT4	44.6	13.8	64.5	15.3	4.2
DT10	25.8	13.6	23.4	8.7	2.7
DT37	23.1	10.3	24.3	6.6	3.7
DT58	22.8	11.9	20.7	5.7	3.7

The road-NO_x adjustment factor was determined as the slope of the best fit line between the 'measured' road contribution and the model derived road contribution, forced through zero (Figure E1). This factor was then applied to the modelled road-NO_x concentration for each monitoring site to provide adjusted modelled road-NO_x concentrations. The total nitrogen dioxide concentrations were then determined by inputting the adjusted modelled road-NO_x concentrations and the background NO_2 concentration into the NO_x to NO_2 calculator.

Figure E1: Comparison of Measured Road-NO_x with Unadjusted Modelled Road-NO_x



MODEL UNCERTAINTY

An evaluation of model performance has been undertaken to establish confidence in model results. LAQM.TG(16) identifies a number of statistical procedures that are appropriate to evaluate model performance and assess the uncertainty. These include:

a) Root mean square error (RMSE);

b) Fractional bias (FB); and

c) Correlation coefficient (CC).

These parameters estimate how the model results agree or diverge from the observations. These calculations can be carried out prior to, and after adjustment, or based on different options for adjustment, and can provide useful information on model improvement. A brief for explanation of each statistic is provided in Table E2, and further details can be found in Box 7.17 of LAQM.TG(16).

Table E2 – Methods for describing model uncertainty

Statistical Parameter	Comments	Ideal value
RMSE	RMSE is used to define the average error or uncertainty of the model. The units of RMSE are the same as the quantities compared. If the RMSE values are higher than 25% of the objective being assessed, it is recommended that the	0.01

	model inputs and verification should be revisited in order to make improvements. For example, if the model predictions are for the annual mean NO_2 objective of 40 µg/m^3, if an RMSE of 10µg/m^3 or above is determined for a model it is advised to revisit the model parameters and model verification. Ideally an RMSE within 10% of the air quality objective would be derived, which equates to 4µg/m^3 for the annual mean NO_2 objective.	
Fractional Bias	It is used to identify if the model shows a systematic tendency to over or under predict. FB values vary between +2 and -2 and has an ideal value of zero. Negative values suggest a model over-prediction and positive values suggest a model under-prediction.	0.00
Correlation Coefficient	It is used to measure the linear relationship between predicted and observed data. A value of zero means no relationship and a value of 1 means absolute relationship. This statistic can be particularly useful when comparing a large number of model and observed data points.	1.00

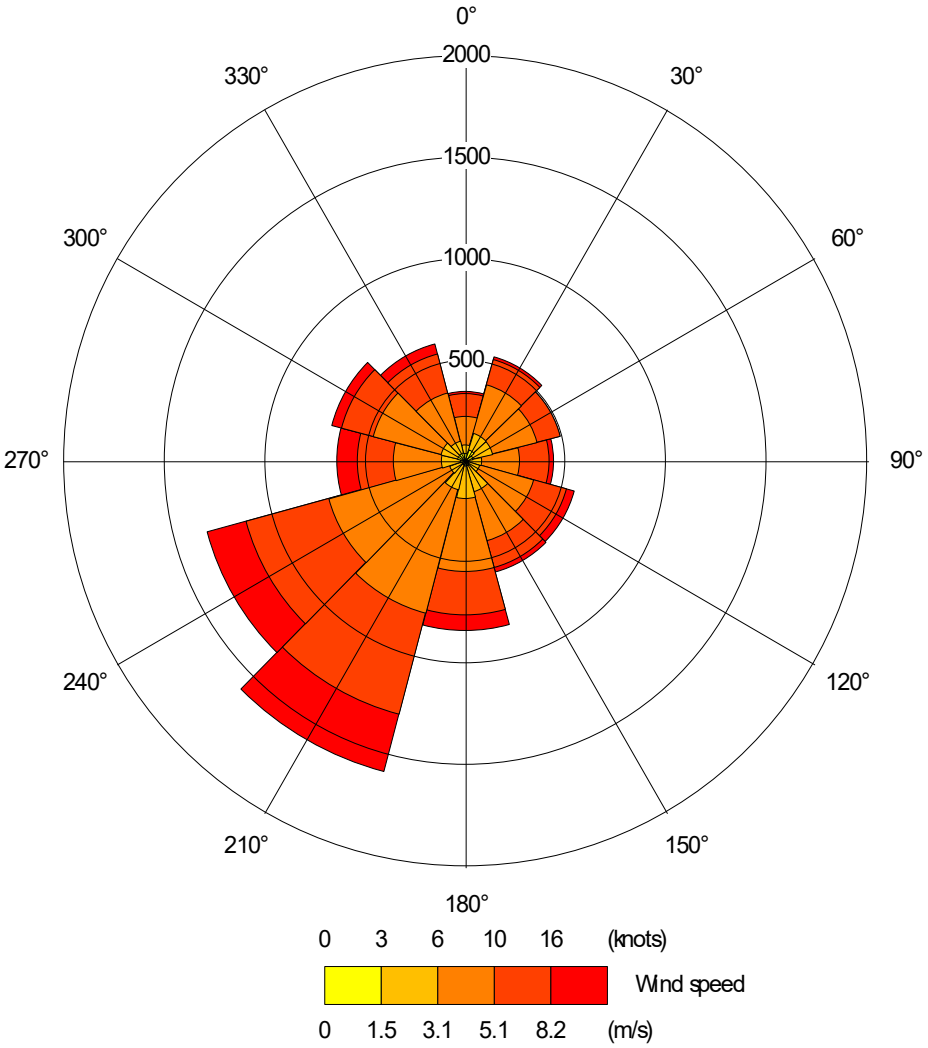
To assess the uncertainty of a model, the RMSE is the simplest parameter to calculate providing an estimate of the average error of the model in the same units as the modelled predictions. It is also often easier to interpret the RMSE than the other statistical parameters and therefore it has been calculated in this assessment to understand the model uncertainty.

The RMSE value calculated after verification was 2.4 and therefore the final predictions are considered to be robust.

Appendix G

WIND ROSE

WIND ROSE FOR MANSTON 2019



Appendix H

MODEL RESULTS

ANNUAL MEAN NO_X CONCENTRATIONS ($\mu g/m^3$)

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T1_0	611758,161210	14.76	9.59	9.75	0.16	0.53%	-7.40%	No	No
T1_10	611751,161203	14.26	9.42	9.55	0.14	0.47%	-6.37%	No	No
T1_20	611744,161197	13.88	9.28	9.41	0.12	0.40%	-5.60%	No	No
T1_30	611737,161190	13.58	9.18	9.29	0.11	0.37%	-5.00%	No	No
T1_40	611729,161183	13.35	9.10	9.20	0.10	0.33%	-4.53%	No	No
T1_50	611722,161176	13.15	9.03	9.12	0.09	0.30%	-4.13%	No	No
T1_60	611715,161169	12.99	8.97	9.06	0.09	0.30%	-3.80%	No	No
T1_70	611708,161162	12.85	8.93	9.01	0.08	0.27%	-3.53%	No	No
T1_80	611700,161155	12.74	8.88	8.96	0.08	0.27%	-3.30%	No	No
T1_90	611693,161148	12.64	8.85	8.92	0.07	0.23%	-3.07%	No	No
T1_100	611686,161141	12.55	8.82	8.89	0.07	0.23%	-2.90%	No	No
T1_110	611679,161134	12.47	8.79	8.86	0.07	0.23%	-2.73%	No	No
T1_120	611672,161127	12.40	8.77	8.83	0.06	0.20%	-2.60%	No	No
T1_130	611664,161120	12.34	8.74	8.81	0.06	0.20%	-2.47%	No	No
T1_140	611657,161113	12.28	8.73	8.78	0.06	0.20%	-2.37%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T1_150	611650,161107	12.23	8.71	8.76	0.06	0.20%	-2.27%	No	No
T1_160	611643,161100	12.19	8.69	8.75	0.05	0.17%	-2.17%	No	No
T1_170	611636,161093	12.15	8.68	8.73	0.05	0.17%	-2.10%	No	No
T1_180	611628,161086	12.11	8.66	8.72	0.05	0.17%	-2.00%	No	No
T1_190	611621,161079	12.07	8.65	8.70	0.05	0.17%	-1.93%	No	No
T1_200	611614,161072	12.04	8.64	8.69	0.05	0.17%	-1.87%	No	No
T2_0	611903,161061	14.51	9.51	9.66	0.15	0.50%	-6.87%	No	No
T2_10	611896,161054	14.10	9.36	9.50	0.14	0.47%	-6.03%	No	No
T2_20	611889,161047	13.78	9.25	9.38	0.12	0.40%	-5.40%	No	No
T2_30	611881,161040	13.53	9.17	9.28	0.11	0.37%	-4.87%	No	No
T2_40	611874,161033	13.33	9.09	9.20	0.11	0.37%	-4.47%	No	No
T2_50	611867,161026	13.15	9.03	9.13	0.10	0.33%	-4.10%	No	No
T2_60	611860,161019	13.01	8.98	9.08	0.09	0.30%	-3.80%	No	No
T2_70	611853,161012	12.88	8.94	9.03	0.09	0.30%	-3.57%	No	No
T2_80	611845,161005	12.78	8.90	8.98	0.08	0.27%	-3.33%	No	No
T2_90	611838,160998	12.66	8.83	8.91	0.08	0.27%	-3.17%	No	No
T2_100	611831,160991	12.58	8.80	8.87	0.08	0.27%	-3.00%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T2_110	611824,160984	12.50	8.77	8.84	0.07	0.23%	-2.83%	No	No
T2_120	611817,160977	12.44	8.75	8.82	0.07	0.23%	-2.70%	No	No
T2_130	611810,160971	12.38	8.73	8.79	0.07	0.23%	-2.57%	No	No
T2_140	611802,160964	12.32	8.71	8.77	0.07	0.23%	-2.47%	No	No
T2_150	611795,160957	12.28	8.69	8.75	0.06	0.20%	-2.37%	No	No
T2_160	611788,160950	12.23	8.67	8.74	0.06	0.20%	-2.27%	No	No
T2_170	611781,160943	12.19	8.66	8.72	0.06	0.20%	-2.20%	No	No
T2_180	611774,160936	12.15	8.65	8.70	0.06	0.20%	-2.13%	No	No
T2_190	611766,160929	12.12	8.63	8.69	0.06	0.20%	-2.07%	No	No
T2_200	611759,160922	12.09	8.62	8.68	0.05	0.17%	-2.00%	No	No
T3_0	612490,160110	13.91	9.52	9.67	0.15	0.50%	-4.50%	No	No
T3_10	612483,160104	13.76	9.46	9.61	0.14	0.47%	-4.20%	No	No
T3_20	612475,160098	13.63	9.42	9.55	0.14	0.47%	-3.97%	No	No
T3_30	612467,160092	13.52	9.37	9.50	0.13	0.43%	-3.73%	No	No
T3_40	612459,160086	13.42	9.34	9.46	0.12	0.40%	-3.57%	No	No
T3_50	612451,160079	13.34	9.31	9.43	0.12	0.40%	-3.40%	No	No
T3_60	612443,160073	13.26	9.28	9.39	0.12	0.40%	-3.27%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T3_70	612436,160067	13.19	9.25	9.36	0.11	0.37%	-3.13%	No	No
T3_80	612428,160061	13.13	9.23	9.33	0.11	0.37%	-3.00%	No	No
T3_90	612420,160055	13.08	9.20	9.31	0.11	0.37%	-2.90%	No	No
T3_100	612412,160048	13.02	9.19	9.29	0.10	0.33%	-2.80%	No	No
T3_110	612404,160042	12.98	9.17	9.27	0.10	0.33%	-2.73%	No	No
T3_120	612396,160036	12.94	9.15	9.25	0.10	0.33%	-2.63%	No	No
T3_130	612388,160030	12.90	9.14	9.23	0.09	0.30%	-2.57%	No	No
T3_140	612381,160024	12.86	9.12	9.22	0.09	0.30%	-2.50%	No	No
T3_150	612373,160017	12.83	9.11	9.20	0.09	0.30%	-2.43%	No	No
T3_160	612365,160011	12.79	9.10	9.19	0.09	0.30%	-2.40%	No	No
T3_170	612357,160005	12.76	9.09	9.17	0.09	0.30%	-2.33%	No	No
T3_180	612349,159999	13.34	9.39	9.48	0.09	0.30%	-2.27%	No	No
T3_190	612341,159993	13.31	9.38	9.47	0.08	0.27%	-2.23%	No	No
T3_200	612334,159986	13.29	9.38	9.46	0.08	0.27%	-2.20%	No	No
T4_0	613114,160304	13.02	9.22	13.25	4.03	13.43%	10.47%	No	No
T4_10	613124,160303	13.01	9.22	10.91	1.69	5.63%	2.67%	No	No
T4_20	613134,160303	13.01	9.22	10.32	1.10	3.67%	0.70%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T4_30	613144,160303	13.01	9.22	10.04	0.82	2.73%	-0.20%	No	No
T4_40	613154,160302	13.01	9.22	9.88	0.66	2.20%	-0.73%	No	No
T4_50	613164,160302	13.01	9.22	9.78	0.56	1.87%	-1.07%	No	No
T4_60	613174,160302	13.01	9.22	9.71	0.49	1.63%	-1.30%	No	No
T4_70	613184,160302	13.01	9.22	9.65	0.44	1.47%	-1.50%	No	No
T4_80	613194,160301	13.01	9.22	9.61	0.39	1.30%	-1.63%	No	No
T4_90	613204,160301	13.01	9.22	9.58	0.36	1.20%	-1.73%	No	No
T4_100	613214,160301	13.01	9.22	9.55	0.33	1.10%	-1.83%	No	No
T4_110	613224,160300	13.01	9.22	9.53	0.31	1.03%	-1.90%	No	No
T4_120	613234,160300	13.01	9.22	9.51	0.29	0.97%	-1.97%	No	No
T4_130	613244,160300	13.01	9.22	9.50	0.28	0.93%	-2.03%	No	No
T4_140	613254,160299	13.02	9.22	9.48	0.26	0.87%	-2.07%	No	No
T4_150	613264,160299	13.02	9.22	9.47	0.25	0.83%	-2.13%	No	No
T4_160	613274,160299	13.02	9.22	9.46	0.24	0.80%	-2.17%	No	No
T4_170	613284,160299	13.02	9.22	9.45	0.23	0.77%	-2.20%	No	No
T4_180	613294,160298	13.02	9.22	9.44	0.22	0.73%	-2.23%	No	No
T4_190	613304,160298	13.03	9.22	9.44	0.21	0.70%	-2.27%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T4_200	613314,160298	13.03	9.23	9.43	0.20	0.67%	-2.30%	No	No
T5_0	613105,160304	13.02	9.22	13.23	4.01	13.37%	10.40%	No	No
T5_10	613095,160305	13.02	9.22	10.96	1.74	5.80%	2.83%	No	No
T5_20	613085,160305	13.02	9.22	10.36	1.14	3.80%	0.83%	No	No
T5_30	613075,160306	13.03	9.22	10.08	0.85	2.83%	-0.13%	No	No
T5_40	613065,160306	13.03	9.23	9.91	0.69	2.30%	-0.70%	No	No
T5_50	613055,160307	13.04	9.23	9.81	0.58	1.93%	-1.07%	No	No
T5_60	613045,160307	13.04	9.23	9.73	0.50	1.67%	-1.33%	No	No
T5_70	613035,160308	13.05	9.23	9.68	0.44	1.47%	-1.53%	No	No
T5_80	613025,160308	13.05	9.23	9.63	0.40	1.33%	-1.70%	No	No
T6_0	612983,160256	13.08	9.20	9.53	0.33	1.10%	-2.20%	No	No
T6_10	612973,160259	13.08	9.21	9.51	0.30	1.00%	-2.27%	No	No
T6_20	612964,160263	13.09	9.21	9.49	0.29	0.97%	-2.37%	No	No
T6_30	612954,160266	13.10	9.21	9.48	0.27	0.90%	-2.40%	No	No
T6_40	612945,160269	13.10	9.21	9.47	0.26	0.87%	-2.47%	No	No
T6_50	612936,160273	13.11	9.21	9.46	0.24	0.80%	-2.53%	No	No
T16_0	613705,161028	18.24	11.10	14.11	3.00	10.00%	-4.60%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T16_10	613708,161038	14.54	9.69	10.92	1.23	4.10%	-2.90%	No	No
T16_20	613711,161047	13.62	9.33	10.13	0.79	2.63%	-2.47%	No	No
T16_30	613714,161057	13.21	9.18	9.77	0.59	1.97%	-2.27%	No	No
T16_40	613717,161066	12.97	9.09	9.57	0.48	1.60%	-2.17%	No	No
T16_50	613720,161076	12.82	9.03	9.44	0.41	1.37%	-2.10%	No	No
T16_60	613723,161085	12.72	8.99	9.35	0.36	1.20%	-2.07%	No	No
T16_70	613726,161095	12.64	8.96	9.28	0.32	1.07%	-2.03%	No	No
T16_80	613729,161105	12.58	8.94	9.23	0.29	0.97%	-2.00%	No	No
T16_90	613732,161114	12.53	8.92	9.18	0.27	0.90%	-1.97%	No	No
T16_100	613735,161124	12.49	8.90	9.15	0.25	0.83%	-1.97%	No	No
T10_0	613635,160025	26.07	14.17	14.67	0.50	1.67%	-28.30%	No	No
T10_10	613635,160035	19.56	11.70	12.00	0.30	1.00%	-15.53%	No	No
T10_20	613635,160045	17.34	10.86	11.09	0.23	0.77%	-11.17%	No	No
T10_30	613635,160055	16.22	10.43	10.63	0.19	0.63%	-8.93%	No	No
T10_40	613635,160065	15.54	10.18	10.35	0.17	0.57%	-7.60%	No	No
T10_50	613635,160075	15.08	10.00	10.16	0.16	0.53%	-6.70%	No	No
T10_60	613634,160085	14.75	9.88	10.03	0.15	0.50%	-6.03%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T10_70	613634,160095	14.50	9.78	9.93	0.14	0.47%	-5.57%	No	No
T10_80	613634,160105	14.31	9.71	9.85	0.14	0.47%	-5.17%	No	No
T10_90	613634,160115	14.15	9.65	9.79	0.13	0.43%	-4.87%	No	No
T10_100	613634,160125	14.02	9.60	9.73	0.13	0.43%	-4.60%	No	No
T10_110	613634,160135	13.91	9.56	9.69	0.13	0.43%	-4.37%	No	No
T10_120	613634,160145	13.82	9.53	9.65	0.13	0.43%	-4.20%	No	No
T10_130	613633,160155	13.74	9.50	9.62	0.12	0.40%	-4.03%	No	No
T10_140	613633,160165	13.67	9.47	9.59	0.12	0.40%	-3.90%	No	No
T10_150	613633,160175	13.61	9.45	9.57	0.12	0.40%	-3.77%	No	No
T10_160	613633,160185	13.55	9.42	9.54	0.12	0.40%	-3.67%	No	No
T10_170	613633,160195	13.50	9.40	9.52	0.12	0.40%	-3.53%	No	No
T10_180	613633,160205	13.45	9.39	9.51	0.12	0.40%	-3.47%	No	No
T10_190	613633,160215	13.41	9.37	9.49	0.12	0.40%	-3.37%	No	No
T10_200	613632,160225	13.37	9.36	9.47	0.12	0.40%	-3.30%	No	No
T9_0	613615,160013	29.55	15.55	16.16	0.61	2.03%	-34.97%	No	No
T9_10	613617,160003	19.64	11.74	12.04	0.30	1.00%	-15.63%	No	No
T9_20	613618,159993	18.53	11.66	11.89	0.23	0.77%	-11.00%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T9_30	613620,159983	17.45	11.25	11.44	0.19	0.63%	-8.90%	No	No
T9_40	613621,159973	16.84	11.01	11.19	0.17	0.57%	-7.70%	No	No
T9_50	613623,159964	16.44	10.86	11.02	0.16	0.53%	-6.90%	No	No
T9_60	613624,159954	16.17	10.76	10.91	0.15	0.50%	-6.37%	No	No
T9_70	613626,159944	15.97	10.68	10.82	0.14	0.47%	-5.97%	No	No
T9_80	613627,159934	15.82	10.63	10.76	0.14	0.47%	-5.70%	No	No
T9_90	613628,159924	15.70	10.58	10.71	0.13	0.43%	-5.47%	No	No
T9_100	613630,159914	15.61	10.55	10.68	0.13	0.43%	-5.30%	No	No
T9_110	613631,159904	15.54	10.52	10.65	0.12	0.40%	-5.13%	No	No
T8_0	613501,159960	25.49	14.33	14.79	0.46	1.53%	-24.50%	No	No
T8_10	613505,159950	19.70	12.11	12.39	0.28	0.93%	-13.20%	No	No
T8_20	613508,159941	17.85	11.40	11.62	0.22	0.73%	-9.60%	No	No
T8_30	613511,159931	16.95	11.06	11.25	0.19	0.63%	-7.87%	No	No
T8_40	613515,159922	16.43	10.86	11.03	0.17	0.57%	-6.83%	No	No
T8_50	613518,159912	16.09	10.73	10.89	0.16	0.53%	-6.17%	No	No
T8_60	613521,159903	15.86	10.64	10.79	0.15	0.50%	-5.73%	No	No
T8_70	613524,159894	15.70	10.58	10.72	0.14	0.47%	-5.40%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T8_80	613528,159884	15.57	10.53	10.67	0.14	0.47%	-5.17%	No	No
T8_90	613531,159875	15.48	10.50	10.63	0.14	0.47%	-5.00%	No	No
T8_100	613534,159865	15.41	10.47	10.60	0.13	0.43%	-4.87%	No	No
T8_110	613537,159856	15.36	10.45	10.58	0.13	0.43%	-4.77%	No	No
T8_120	613541,159846	15.32	10.44	10.56	0.13	0.43%	-4.70%	No	No
T8_130	613544,159837	15.29	10.43	10.55	0.12	0.40%	-4.63%	No	No
T8_140	613547,159827	15.27	10.42	10.54	0.12	0.40%	-4.60%	No	No
T8_150	613550,159818	15.26	10.42	10.54	0.12	0.40%	-4.60%	No	No
T8_160	613554,159808	15.26	10.41	10.53	0.12	0.40%	-4.57%	No	No
T8_170	613557,159799	15.26	10.42	10.53	0.12	0.40%	-4.60%	No	No
T8_180	613560,159790	15.27	10.42	10.53	0.12	0.40%	-4.60%	No	No
T12_0	613885,159884	19.20	11.95	12.05	0.10	0.33%	-12.67%	No	No
T12_10	613875,159886	17.98	11.47	11.58	0.10	0.33%	-10.20%	No	No
T12_20	613866,159889	17.36	11.23	11.33	0.11	0.37%	-8.93%	No	No
T12_30	613856,159891	16.98	11.08	11.19	0.11	0.37%	-8.13%	No	No
T12_40	613846,159894	16.73	10.98	11.09	0.11	0.37%	-7.63%	No	No
T12_50	613836,159896	16.55	10.91	11.02	0.11	0.37%	-7.27%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T12_60	613827,159898	16.41	10.86	10.97	0.11	0.37%	-6.97%	No	No
T12_70	613817,159901	16.31	10.82	10.93	0.11	0.37%	-6.77%	No	No
T13_0	613859,159743	23.41	13.55	13.64	0.09	0.30%	-21.40%	No	No
T13_10	613852,159750	20.27	12.34	12.43	0.09	0.30%	-14.97%	No	No
T13_20	613846,159758	18.80	11.78	11.87	0.09	0.30%	-11.93%	No	No
T13_30	613839,159766	17.95	11.45	11.54	0.09	0.30%	-10.20%	No	No
T13_40	613833,159773	17.40	11.24	11.33	0.09	0.30%	-9.07%	No	No
T13_50	613826,159781	17.01	11.09	11.18	0.09	0.30%	-8.27%	No	No
T13_60	613820,159788	16.73	10.98	11.07	0.09	0.30%	-7.67%	No	No
T13_70	613813,159796	16.50	10.90	10.99	0.09	0.30%	-7.23%	No	No
T13_80	613807,159804	16.33	10.83	10.92	0.09	0.30%	-6.87%	No	No
T13_90	613800,159811	16.19	10.78	10.87	0.09	0.30%	-6.57%	No	No
T14_0	613912,159611	22.11	13.11	13.19	0.08	0.27%	-18.60%	No	No
T14_10	613921,159609	19.45	12.06	12.14	0.08	0.27%	-13.20%	No	No
T14_20	613931,159607	18.18	11.56	11.64	0.08	0.27%	-10.63%	No	No
T14_30	613941,159604	17.43	11.27	11.35	0.08	0.27%	-9.13%	No	No
T14_40	613950,159602	16.94	11.07	11.15	0.08	0.27%	-8.13%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T14_50	613960,159599	16.58	10.93	11.01	0.08	0.27%	-7.40%	No	No
T14_60	613970,159597	16.32	10.83	10.91	0.08	0.27%	-6.87%	No	No
T14_70	613980,159595	16.11	10.75	10.83	0.08	0.27%	-6.43%	No	No
T14_80	613989,159592	15.94	10.68	10.76	0.08	0.27%	-6.10%	No	No
T14_90	613999,159590	15.81	10.63	10.71	0.08	0.27%	-5.83%	No	No
T14_100	614009,159588	17.82	12.41	12.49	0.08	0.27%	-5.60%	No	No
T14_110	614018,159585	17.72	12.38	12.46	0.08	0.27%	-5.40%	No	No
T15_0	614315,160248	34.37	17.69	18.95	1.25	4.17%	-41.57%	No	No
T15_10	614306,160244	22.93	13.24	13.82	0.58	1.93%	-20.50%	No	No
T15_20	614297,160240	19.77	12.02	12.41	0.39	1.30%	-14.67%	No	No
T15_30	614288,160236	18.27	11.44	11.75	0.31	1.03%	-11.90%	No	No
T15_40	614279,160232	17.41	11.11	11.36	0.25	0.83%	-10.30%	No	No
T15_50	614270,160228	16.85	10.89	11.11	0.22	0.73%	-9.27%	No	No
T15_60	614260,160224	16.45	10.74	10.94	0.20	0.67%	-8.53%	No	No
T15_70	614251,160219	16.16	10.63	10.81	0.18	0.60%	-8.00%	No	No
T15_80	614242,160215	15.94	10.55	10.71	0.16	0.53%	-7.57%	No	No
T15_90	614233,160211	15.76	10.48	10.63	0.15	0.50%	-7.27%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T15_100	614224,160207	15.62	10.42	10.57	0.14	0.47%	-6.97%	No	No
T15_110	614215,160203	15.50	10.38	10.52	0.14	0.47%	-6.77%	No	No
T15_120	614206,160199	15.39	10.34	10.47	0.13	0.43%	-6.57%	No	No
T15_130	614197,160194	15.31	10.31	10.43	0.13	0.43%	-6.40%	No	No
T15_140	614188,160190	15.23	10.28	10.40	0.12	0.40%	-6.27%	No	No
T18_0	614110,161381	33.67	17.36	17.42	0.06	0.20%	-45.10%	No	No
T18_10	614100,161383	21.07	12.33	12.40	0.07	0.23%	-19.90%	No	No
T18_20	614090,161385	17.64	10.97	11.04	0.07	0.23%	-13.00%	No	No
T18_30	614080,161387	16.03	10.34	10.40	0.07	0.23%	-9.73%	No	No
T18_40	614070,161388	15.10	9.97	10.03	0.07	0.23%	-7.83%	No	No
T18_50	614060,161390	14.49	9.73	9.80	0.07	0.23%	-6.60%	No	No
T18_60	614051,161392	14.06	9.56	9.63	0.07	0.23%	-5.73%	No	No
T18_70	614041,161394	13.75	9.44	9.51	0.07	0.23%	-5.10%	No	No
T18_80	614031,161396	13.50	9.34	9.41	0.07	0.23%	-4.60%	No	No
T18_90	614021,161397	13.30	9.27	9.34	0.07	0.23%	-4.20%	No	No
T18_100	614011,161399	13.15	9.21	9.28	0.07	0.23%	-3.87%	No	No
T18_110	614001,161401	13.01	9.16	9.23	0.07	0.23%	-3.57%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T18_120	613992,161403	12.89	9.06	9.13	0.07	0.23%	-3.33%	No	No
T18_130	613982,161405	12.80	9.02	9.10	0.07	0.23%	-3.17%	No	No
T18_140	613972,161406	12.71	8.99	9.07	0.07	0.23%	-2.97%	No	No
T18_150	613962,161408	12.64	8.96	9.04	0.07	0.23%	-2.83%	No	No
T18_160	613952,161410	12.58	8.94	9.02	0.08	0.27%	-2.70%	No	No
T18_170	613942,161412	12.52	8.92	8.99	0.08	0.27%	-2.57%	No	No
T18_180	613933,161414	12.47	8.90	8.97	0.08	0.27%	-2.47%	No	No
T18_190	613923,161415	12.42	8.88	8.96	0.08	0.27%	-2.37%	No	No
T18_200	613913,161417	12.38	8.86	8.94	0.08	0.27%	-2.27%	No	No
T20_0	614136,161424	45.51	21.93	21.99	0.06	0.20%	-69.37%	No	No
T20_10	614145,161423	23.81	13.37	13.43	0.06	0.20%	-25.57%	No	No
T20_20	614155,161421	19.15	11.54	11.60	0.06	0.20%	-16.10%	No	No
T20_30	614165,161420	17.07	10.73	10.79	0.06	0.20%	-11.90%	No	No
T20_40	614175,161419	15.89	10.28	10.33	0.06	0.20%	-9.50%	No	No
T20_50	614185,161418	15.14	9.98	10.04	0.06	0.20%	-7.97%	No	No
T20_60	614195,161417	14.61	9.78	9.83	0.06	0.20%	-6.90%	No	No
T20_70	614205,161416	14.22	9.63	9.68	0.06	0.20%	-6.10%	No	No

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		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T20_80	614215,161415	13.92	9.51	9.57	0.06	0.20%	-5.50%	No	No
T20_90	614225,161414	13.69	9.42	9.47	0.05	0.17%	-5.00%	No	No
T20_100	614235,161413	13.49	9.34	9.40	0.05	0.17%	-4.63%	No	No
T20_110	614245,161412	13.33	9.28	9.33	0.05	0.17%	-4.30%	No	No
T20_120	614255,161411	13.20	9.23	9.28	0.05	0.17%	-4.00%	No	No
T20_130	614265,161410	13.08	9.18	9.24	0.05	0.17%	-3.77%	No	No
T20_140	614275,161409	12.98	9.14	9.20	0.05	0.17%	-3.57%	No	No
T20_150	614285,161408	12.89	9.11	9.16	0.05	0.17%	-3.40%	No	No
T20_160	614295,161407	12.81	9.08	9.13	0.05	0.17%	-3.23%	No	No
T20_170	614305,161406	12.74	9.05	9.10	0.05	0.17%	-3.10%	No	No
T20_180	614315,161405	12.68	9.03	9.08	0.05	0.17%	-2.97%	No	No
T20_190	614324,161404	12.62	9.01	9.06	0.05	0.17%	-2.87%	No	No
T20_200	614334,161403	12.57	8.99	9.04	0.05	0.17%	-2.77%	No	No
T19_0	614109,161317	46.20	22.13	22.20	0.07	0.23%	-70.97%	No	No
T19_10	614118,161315	24.29	13.52	13.59	0.07	0.23%	-26.63%	No	No
T19_20	614128,161314	19.46	11.65	11.71	0.07	0.23%	-16.80%	No	No
T19_30	614138,161313	17.32	10.81	10.88	0.07	0.23%	-12.43%	No	No

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		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T19_40	614148,161312	16.11	10.35	10.41	0.07	0.23%	-9.97%	No	No
T19_50	614158,161310	15.32	10.04	10.11	0.07	0.23%	-8.33%	No	No
T19_60	614168,161309	14.77	9.83	9.90	0.06	0.20%	-7.23%	No	No
T19_70	614178,161308	14.37	9.68	9.74	0.06	0.20%	-6.40%	No	No
T19_80	614188,161306	14.06	9.56	9.62	0.06	0.20%	-5.77%	No	No
T19_90	614198,161305	13.81	9.46	9.52	0.06	0.20%	-5.27%	No	No
T19_100	614208,161304	13.61	9.38	9.45	0.06	0.20%	-4.83%	No	No
T19_110	614218,161303	13.44	9.32	9.38	0.06	0.20%	-4.50%	No	No
T19_120	614228,161301	13.30	9.27	9.33	0.06	0.20%	-4.23%	No	No
T19_130	614237,161300	13.18	9.22	9.28	0.06	0.20%	-3.97%	No	No
T19_140	614247,161299	13.08	9.18	9.24	0.06	0.20%	-3.77%	No	No
T19_150	614257,161298	12.98	9.14	9.20	0.06	0.20%	-3.57%	No	No
T19_160	614267,161296	12.90	9.11	9.17	0.06	0.20%	-3.40%	No	No
T19_170	614277,161295	12.83	9.09	9.14	0.06	0.20%	-3.27%	No	No
T19_180	614287,161294	12.77	9.06	9.12	0.06	0.20%	-3.13%	No	No
T19_190	614297,161292	12.71	9.04	9.09	0.06	0.20%	-3.00%	No	No
T19_200	614307,161291	12.65	9.02	9.07	0.05	0.17%	-2.90%	No	No

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		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T7_0	613452,159956	36.13	18.33	19.13	0.80	2.67%	-45.50%	No	No
T7_10	613455,159965	23.28	13.45	13.85	0.40	1.33%	-20.27%	No	No
T7_20	613458,159975	20.02	12.21	12.51	0.30	1.00%	-13.87%	No	No
T7_30	613462,159984	18.50	11.64	11.89	0.25	0.83%	-10.87%	No	No
T7_40	613465,159994	17.63	11.31	11.53	0.22	0.73%	-9.17%	No	No
T7_50	613468,160003	15.79	10.27	10.47	0.20	0.67%	-8.03%	No	No
T7_60	613471,160013	15.38	10.11	10.30	0.19	0.63%	-7.20%	No	No
T7_70	613474,160022	15.07	10.00	10.18	0.18	0.60%	-6.60%	No	No
T23_0	612412,158396	28.42	15.22	16.31	1.08	3.60%	-29.50%	No	No
T23_10	612403,158394	21.82	12.66	13.27	0.61	2.03%	-17.60%	No	No
T23_20	612393,158392	19.33	11.70	12.13	0.43	1.43%	-13.10%	No	No
T23_30	612383,158390	18.03	11.20	11.54	0.33	1.10%	-10.77%	No	No
T23_40	612373,158388	17.23	10.89	11.17	0.28	0.93%	-9.30%	No	No
T23_50	612364,158385	16.68	10.68	10.92	0.24	0.80%	-8.30%	No	No
T23_60	612354,158383	16.27	10.53	10.73	0.21	0.70%	-7.57%	No	No
T23_70	612344,158381	15.96	10.41	10.59	0.19	0.63%	-6.97%	No	No
T23_80	612334,158379	15.71	10.31	10.48	0.17	0.57%	-6.53%	No	No

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		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T23_90	612324,158377	15.50	10.23	10.39	0.16	0.53%	-6.13%	No	No
T23_100	612315,158375	15.33	10.17	10.31	0.15	0.50%	-5.83%	No	No
T23_110	612305,158372	15.18	10.11	10.25	0.14	0.47%	-5.53%	No	No
T23_120	612295,158370	15.05	10.06	10.19	0.13	0.43%	-5.30%	No	No
T23_130	612285,158368	14.93	10.01	10.14	0.12	0.40%	-5.07%	No	No
T22_0	612421,158558	33.44	17.22	18.63	1.40	4.67%	-38.47%	No	No
T22_10	612411,158560	23.53	13.35	14.08	0.73	2.43%	-20.60%	No	No
T22_20	612401,158561	20.20	12.06	12.56	0.50	1.67%	-14.57%	No	No
T22_30	612391,158562	18.50	11.40	11.79	0.39	1.30%	-11.50%	No	No
T22_40	612381,158564	17.48	11.00	11.32	0.32	1.07%	-9.63%	No	No
T22_50	612371,158565	16.78	10.73	11.00	0.27	0.90%	-8.33%	No	No
T22_60	612361,158567	16.26	10.54	10.77	0.23	0.77%	-7.40%	No	No
T22_70	612352,158568	15.87	10.39	10.60	0.21	0.70%	-6.70%	No	No
T22_80	612342,158569	15.56	10.27	10.46	0.19	0.63%	-6.13%	No	No
T22_90	612332,158571	15.31	10.17	10.34	0.17	0.57%	-5.67%	No	No
T22_100	612322,158572	15.10	10.09	10.25	0.16	0.53%	-5.27%	No	No
T22_110	612312,158574	14.92	10.02	10.17	0.15	0.50%	-4.93%	No	No

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T22_120	612302,158575	14.77	9.96	10.10	0.14	0.47%	-4.63%	No	No
T22_130	612292,158576	14.63	9.91	10.04	0.13	0.43%	-4.40%	No	No
T22_140	612282,158578	14.51	9.87	9.99	0.12	0.40%	-4.17%	No	No
T21_0	612435,158690	39.41	19.58	21.40	1.82	6.07%	-49.17%	No	No
T21_10	612425,158693	24.48	13.73	14.53	0.80	2.67%	-22.27%	No	No
T21_20	612415,158695	20.41	12.15	12.67	0.52	1.73%	-14.90%	No	No
T21_30	612406,158698	18.50	11.40	11.80	0.39	1.30%	-11.47%	No	No
T21_40	612396,158700	17.39	10.97	11.29	0.32	1.07%	-9.43%	No	No
T21_50	612386,158703	16.65	10.69	10.95	0.27	0.90%	-8.07%	No	No
T21_60	612377,158706	16.12	10.48	10.72	0.23	0.77%	-7.10%	No	No
T21_70	612367,158708	15.73	10.33	10.54	0.21	0.70%	-6.40%	No	No
T21_80	612357,158711	15.41	10.21	10.40	0.19	0.63%	-5.83%	No	No
T21_90	612348,158713	15.16	10.12	10.29	0.17	0.57%	-5.37%	No	No
T21_100	612338,158716	14.96	10.04	10.19	0.16	0.53%	-4.97%	No	No
T21_110	612328,158718	14.78	9.97	10.12	0.14	0.47%	-4.63%	No	No
T21_120	612319,158721	14.63	9.92	10.05	0.13	0.43%	-4.37%	No	No
T21_130	612309,158723	14.50	9.87	9.99	0.13	0.43%	-4.13%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T21_140	612299,158726	14.39	9.82	9.94	0.12	0.40%	-3.93%	No	No
T21_150	612290,158729	14.29	9.78	9.90	0.11	0.37%	-3.73%	No	No
T21_160	612280,158731	14.20	9.75	9.86	0.11	0.37%	-3.57%	No	No
T21_170	612270,158734	14.12	9.72	9.82	0.10	0.33%	-3.40%	No	No
T11_0	613751,160001	33.52	17.01	17.73	0.72	2.40%	-42.93%	No	No
T11_10	613753,160011	21.35	12.38	12.72	0.34	1.13%	-19.10%	No	No
T11_20	613756,160021	18.26	11.21	11.45	0.24	0.80%	-13.00%	No	No
T11_30	613759,160030	16.84	10.67	10.87	0.20	0.67%	-10.23%	No	No
T11_40	613761,160040	16.04	10.37	10.54	0.17	0.57%	-8.63%	No	No
T11_50	613764,160050	15.51	10.17	10.32	0.16	0.53%	-7.57%	No	No
T11_60	613767,160059	15.13	10.02	10.17	0.15	0.50%	-6.83%	No	No
T11_70	613769,160069	14.85	9.92	10.06	0.14	0.47%	-6.30%	No	No
T11_80	613772,160078	14.63	9.83	9.97	0.13	0.43%	-5.87%	No	No
T11_90	613775,160088	14.46	9.77	9.89	0.13	0.43%	-5.50%	No	No
T11_100	613777,160098	14.31	9.71	9.84	0.12	0.40%	-5.23%	No	No
T11_110	613780,160107	14.19	9.67	9.79	0.12	0.40%	-4.97%	No	No
T17_0	614085,161192	29.71	15.64	15.73	0.09	0.30%	-37.57%	No	No

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		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T17_10	614075,161194	20.54	12.06	12.15	0.09	0.30%	-18.93%	No	No
T17_20	614065,161196	17.59	10.92	11.01	0.09	0.30%	-12.93%	No	No
T17_30	614055,161198	16.13	10.35	10.44	0.09	0.30%	-9.93%	No	No
T17_40	614045,161200	15.26	10.02	10.11	0.09	0.30%	-8.13%	No	No
T17_50	614036,161202	14.68	9.79	9.88	0.09	0.30%	-6.97%	No	No
T17_60	614026,161204	14.26	9.63	9.73	0.09	0.30%	-6.10%	No	No
T17_70	614016,161206	13.95	9.51	9.61	0.10	0.33%	-5.43%	No	No
T17_80	614006,161208	13.71	9.42	9.52	0.10	0.33%	-4.93%	No	No
T17_90	613996,161210	13.50	9.29	9.39	0.10	0.33%	-4.53%	No	No
T17_100	613987,161212	13.34	9.23	9.33	0.10	0.33%	-4.20%	No	No
T17_110	613977,161214	13.21	9.18	9.28	0.10	0.33%	-3.90%	No	No
T17_120	613967,161215	13.10	9.14	9.24	0.10	0.33%	-3.67%	No	No
T17_130	613957,161217	13.00	9.10	9.20	0.10	0.33%	-3.47%	No	No
T17_140	613947,161219	12.92	9.07	9.17	0.11	0.37%	-3.30%	No	No
T17_150	613938,161221	12.84	9.04	9.15	0.11	0.37%	-3.13%	No	No
T17_160	613928,161223	12.78	9.01	9.12	0.11	0.37%	-3.00%	No	No
T17_170	613918,161225	12.72	8.99	9.10	0.11	0.37%	-2.87%	No	No

Receptor ID	Receptor Location	Annual Mean NO_x Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T17_180	613908,161227	12.66	8.97	9.08	0.11	0.37%	-2.77%	No	No
T17_190	613898,161229	12.62	8.95	9.07	0.11	0.37%	-2.63%	No	No

ANNUAL MEAN NH_3 CONCENTRATIONS ($\mu g/m^3$)

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T1_0	611758,161210	1.19	1.21	1.21	0.01	0.17%	0.91%	No	No
T1_10	611751,161203	1.18	1.20	1.20	0.00	0.15%	0.82%	No	No
T1_20	611744,161197	1.18	1.19	1.20	0.00	0.13%	0.75%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T1_30	611737,161190	1.17	1.19	1.19	0.00	0.11%	0.70%	No	No
T1_40	611729,161183	1.17	1.19	1.19	0.00	0.10%	0.66%	No	No
T1_50	611722,161176	1.17	1.18	1.19	0.00	0.09%	0.63%	No	No
T1_60	611715,161169	1.17	1.18	1.18	0.00	0.08%	0.60%	No	No
T1_70	611708,161162	1.16	1.18	1.18	0.00	0.07%	0.58%	No	No
T1_80	611700,161155	1.16	1.18	1.18	0.00	0.07%	0.56%	No	No
T1_90	611693,161148	1.16	1.18	1.18	0.00	0.06%	0.54%	No	No
T1_100	611686,161141	1.16	1.18	1.18	0.00	0.06%	0.53%	No	No
T1_110	611679,161134	1.16	1.17	1.18	0.00	0.06%	0.52%	No	No
T1_120	611672,161127	1.16	1.17	1.18	0.00	0.05%	0.51%	No	No
T1_130	611664,161120	1.16	1.17	1.17	0.00	0.05%	0.50%	No	No
T1_140	611657,161113	1.16	1.17	1.17	0.00	0.05%	0.49%	No	No
T1_150	611650,161107	1.16	1.17	1.17	0.00	0.05%	0.48%	No	No
T1_160	611643,161100	1.16	1.17	1.17	0.00	0.04%	0.48%	No	No
T1_170	611636,161093	1.16	1.17	1.17	0.00	0.04%	0.47%	No	No
T1_180	611628,161086	1.16	1.17	1.17	0.00	0.04%	0.46%	No	No
T1_190	611621,161079	1.16	1.17	1.17	0.00	0.04%	0.46%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T1_200	611614,161072	1.16	1.17	1.17	0.00	0.04%	0.45%	No	No
T2_0	611903,161061	1.18	1.20	1.21	0.00	0.16%	0.86%	No	No
T2_10	611896,161054	1.18	1.20	1.20	0.00	0.14%	0.79%	No	No
T2_20	611889,161047	1.17	1.19	1.20	0.00	0.12%	0.73%	No	No
T2_30	611881,161040	1.17	1.19	1.19	0.00	0.11%	0.69%	No	No
T2_40	611874,161033	1.17	1.19	1.19	0.00	0.10%	0.65%	No	No
T2_50	611867,161026	1.17	1.18	1.19	0.00	0.09%	0.63%	No	No
T2_60	611860,161019	1.17	1.18	1.18	0.00	0.08%	0.60%	No	No
T2_70	611853,161012	1.16	1.18	1.18	0.00	0.08%	0.58%	No	No
T2_80	611845,161005	1.16	1.18	1.18	0.00	0.07%	0.56%	No	No
T2_90	611838,160998	1.16	1.18	1.18	0.00	0.07%	0.55%	No	No
T2_100	611831,160991	1.16	1.18	1.18	0.00	0.07%	0.54%	No	No
T2_110	611824,160984	1.16	1.18	1.18	0.00	0.06%	0.53%	No	No
T2_120	611817,160977	1.16	1.17	1.18	0.00	0.06%	0.52%	No	No
T2_130	611810,160971	1.16	1.17	1.18	0.00	0.06%	0.51%	No	No
T2_140	611802,160964	1.16	1.17	1.17	0.00	0.05%	0.50%	No	No
T2_150	611795,160957	1.16	1.17	1.17	0.00	0.05%	0.49%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T2_160	611788,160950	1.16	1.17	1.17	0.00	0.05%	0.49%	No	No
T2_170	611781,160943	1.16	1.17	1.17	0.00	0.05%	0.48%	No	No
T2_180	611774,160936	1.16	1.17	1.17	0.00	0.05%	0.47%	No	No
T2_190	611766,160929	1.16	1.17	1.17	0.00	0.04%	0.47%	No	No
T2_200	611759,160922	1.16	1.17	1.17	0.00	0.04%	0.46%	No	No
T3_0	612490,160110	1.17	1.19	1.19	0.00	0.13%	0.70%	No	No
T3_10	612483,160104	1.17	1.18	1.19	0.00	0.12%	0.67%	No	No
T3_20	612475,160098	1.17	1.18	1.19	0.00	0.11%	0.65%	No	No
T3_30	612467,160092	1.17	1.18	1.18	0.00	0.11%	0.63%	No	No
T3_40	612459,160086	1.16	1.18	1.18	0.00	0.10%	0.61%	No	No
T3_50	612451,160079	1.16	1.18	1.18	0.00	0.10%	0.60%	No	No
T3_60	612443,160073	1.16	1.18	1.18	0.00	0.09%	0.58%	No	No
T3_70	612436,160067	1.16	1.18	1.18	0.00	0.09%	0.57%	No	No
T3_80	612428,160061	1.16	1.18	1.18	0.00	0.09%	0.56%	No	No
T3_90	612420,160055	1.16	1.18	1.18	0.00	0.08%	0.55%	No	No
T3_100	612412,160048	1.16	1.18	1.18	0.00	0.08%	0.55%	No	No
T3_110	612404,160042	1.16	1.17	1.18	0.00	0.08%	0.54%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T3_120	612396,160036	1.16	1.17	1.18	0.00	0.07%	0.53%	No	No
T3_130	612388,160030	1.16	1.17	1.18	0.00	0.07%	0.52%	No	No
T3_140	612381,160024	1.16	1.17	1.18	0.00	0.07%	0.52%	No	No
T3_150	612373,160017	1.16	1.17	1.17	0.00	0.07%	0.51%	No	No
T3_160	612365,160011	1.16	1.17	1.17	0.00	0.07%	0.51%	No	No
T3_170	612357,160005	1.16	1.17	1.17	0.00	0.06%	0.50%	No	No
T3_180	612349,159999	1.16	1.17	1.17	0.00	0.06%	0.50%	No	No
T3_190	612341,159993	1.16	1.17	1.17	0.00	0.06%	0.50%	No	No
T3_200	612334,159986	1.16	1.17	1.17	0.00	0.06%	0.49%	No	No
T4_0	613114,160304	1.16	1.17	1.39	0.22	7.26%	7.72%	No	No
T4_10	613124,160303	1.16	1.17	1.25	0.08	2.67%	3.14%	No	No
T4_20	613134,160303	1.16	1.17	1.22	0.05	1.60%	2.07%	No	No
T4_30	613144,160303	1.16	1.17	1.21	0.03	1.14%	1.60%	No	No
T4_40	613154,160302	1.16	1.17	1.20	0.03	0.88%	1.34%	No	No
T4_50	613164,160302	1.16	1.17	1.20	0.02	0.72%	1.18%	No	No
T4_60	613174,160302	1.16	1.17	1.19	0.02	0.61%	1.07%	No	No
T4_70	613184,160302	1.16	1.17	1.19	0.02	0.53%	0.99%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T4_80	613194,160301	1.16	1.17	1.19	0.01	0.47%	0.93%	No	No
T4_90	613204,160301	1.16	1.17	1.19	0.01	0.42%	0.88%	No	No
T4_100	613214,160301	1.16	1.17	1.19	0.01	0.38%	0.85%	No	No
T4_110	613224,160300	1.16	1.17	1.19	0.01	0.35%	0.81%	No	No
T4_120	613234,160300	1.16	1.17	1.18	0.01	0.32%	0.79%	No	No
T4_130	613244,160300	1.16	1.17	1.18	0.01	0.30%	0.77%	No	No
T4_140	613254,160299	1.16	1.17	1.18	0.01	0.28%	0.75%	No	No
T4_150	613264,160299	1.16	1.17	1.18	0.01	0.27%	0.73%	No	No
T4_160	613274,160299	1.16	1.17	1.18	0.01	0.25%	0.72%	No	No
T4_170	613284,160299	1.16	1.17	1.18	0.01	0.24%	0.70%	No	No
T4_180	613294,160298	1.16	1.17	1.18	0.01	0.23%	0.69%	No	No
T4_190	613304,160298	1.16	1.17	1.18	0.01	0.22%	0.68%	No	No
T4_200	613314,160298	1.16	1.17	1.18	0.01	0.21%	0.67%	No	No
T5_0	613105,160304	1.16	1.17	1.39	0.21	7.05%	7.51%	No	No
T5_10	613095,160305	1.16	1.17	1.25	0.08	2.62%	3.09%	No	No
T5_20	613085,160305	1.16	1.17	1.22	0.05	1.56%	2.03%	No	No
T5_30	613075,160306	1.16	1.18	1.21	0.03	1.10%	1.57%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T5_40	613065,160306	1.16	1.18	1.20	0.03	0.84%	1.31%	No	No
T5_50	613055,160307	1.16	1.18	1.20	0.02	0.68%	1.14%	No	No
T5_60	613045,160307	1.16	1.18	1.19	0.02	0.57%	1.03%	No	No
T5_70	613035,160308	1.16	1.18	1.19	0.01	0.49%	0.95%	No	No
T5_80	613025,160308	1.16	1.18	1.19	0.01	0.43%	0.90%	No	No
T6_0	612983,160256	1.16	1.18	1.19	0.01	0.33%	0.81%	No	No
T6_10	612973,160259	1.16	1.18	1.19	0.01	0.30%	0.79%	No	No
T6_20	612964,160263	1.16	1.18	1.19	0.01	0.28%	0.76%	No	No
T6_30	612954,160266	1.16	1.18	1.19	0.01	0.26%	0.75%	No	No
T6_40	612945,160269	1.16	1.18	1.18	0.01	0.24%	0.73%	No	No
T6_50	612936,160273	1.16	1.18	1.18	0.01	0.23%	0.72%	No	No
T16_0	613705,161028	1.26	1.31	1.49	0.18	5.88%	7.58%	No	No
T16_10	613708,161038	1.20	1.22	1.29	0.07	2.20%	3.11%	No	No
T16_20	613711,161047	1.18	1.20	1.24	0.04	1.34%	2.05%	No	No
T16_30	613714,161057	1.17	1.19	1.22	0.03	0.96%	1.59%	No	No
T16_40	613717,161066	1.17	1.19	1.21	0.02	0.76%	1.34%	No	No
T16_50	613720,161076	1.17	1.19	1.20	0.02	0.63%	1.18%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T16_60	613723,161085	1.17	1.18	1.20	0.02	0.54%	1.08%	No	No
T16_70	613726,161095	1.17	1.18	1.20	0.01	0.47%	1.00%	No	No
T16_80	613729,161105	1.16	1.18	1.19	0.01	0.42%	0.94%	No	No
T16_90	613732,161114	1.16	1.18	1.19	0.01	0.38%	0.89%	No	No
T16_100	613735,161124	1.16	1.18	1.19	0.01	0.35%	0.85%	No	No
T10_0	613635,160025	1.33	1.41	1.43	0.02	0.72%	3.27%	No	No
T10_10	613635,160035	1.24	1.28	1.29	0.01	0.37%	1.79%	No	No
T10_20	613635,160045	1.21	1.24	1.25	0.01	0.27%	1.32%	No	No
T10_30	613635,160055	1.20	1.22	1.23	0.01	0.21%	1.10%	No	No
T10_40	613635,160065	1.19	1.21	1.22	0.01	0.18%	0.97%	No	No
T10_50	613635,160075	1.18	1.20	1.21	0.00	0.16%	0.89%	No	No
T10_60	613634,160085	1.18	1.20	1.20	0.00	0.15%	0.83%	No	No
T10_70	613634,160095	1.18	1.19	1.20	0.00	0.14%	0.79%	No	No
T10_80	613634,160105	1.17	1.19	1.20	0.00	0.13%	0.75%	No	No
T10_90	613634,160115	1.17	1.19	1.19	0.00	0.13%	0.73%	No	No
T10_100	613634,160125	1.17	1.19	1.19	0.00	0.12%	0.71%	No	No
T10_110	613634,160135	1.17	1.19	1.19	0.00	0.12%	0.69%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T10_120	613634,160145	1.17	1.18	1.19	0.00	0.12%	0.67%	No	No
T10_130	613633,160155	1.17	1.18	1.19	0.00	0.12%	0.66%	No	No
T10_140	613633,160165	1.17	1.18	1.19	0.00	0.11%	0.65%	No	No
T10_150	613633,160175	1.17	1.18	1.19	0.00	0.11%	0.64%	No	No
T10_160	613633,160185	1.17	1.18	1.18	0.00	0.11%	0.63%	No	No
T10_170	613633,160195	1.17	1.18	1.18	0.00	0.11%	0.63%	No	No
T10_180	613633,160205	1.16	1.18	1.18	0.00	0.11%	0.62%	No	No
T10_190	613633,160215	1.16	1.18	1.18	0.00	0.11%	0.61%	No	No
T10_200	613632,160225	1.16	1.18	1.18	0.00	0.11%	0.61%	No	No
T9_0	613615,160013	1.38	1.47	1.50	0.03	0.90%	4.09%	No	No
T9_10	613617,160003	1.23	1.28	1.29	0.01	0.36%	1.74%	No	No
T9_20	613618,159993	1.20	1.23	1.24	0.01	0.25%	1.24%	No	No
T9_30	613620,159983	1.19	1.22	1.22	0.01	0.20%	1.03%	No	No
T9_40	613621,159973	1.18	1.21	1.21	0.01	0.17%	0.92%	No	No
T9_50	613623,159964	1.18	1.20	1.21	0.00	0.15%	0.85%	No	No
T9_60	613624,159954	1.18	1.20	1.20	0.00	0.14%	0.80%	No	No
T9_70	613626,159944	1.18	1.19	1.20	0.00	0.13%	0.77%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T9_80	613627,159934	1.17	1.19	1.20	0.00	0.12%	0.74%	No	No
T9_90	613628,159924	1.17	1.19	1.19	0.00	0.12%	0.73%	No	No
T9_100	613630,159914	1.17	1.19	1.19	0.00	0.11%	0.71%	No	No
T9_110	613631,159904	1.17	1.19	1.19	0.00	0.11%	0.70%	No	No
T8_0	613501,159960	1.76	1.83	1.85	0.02	0.62%	2.95%	No	No
T8_10	613505,159950	1.68	1.72	1.73	0.01	0.32%	1.63%	No	No
T8_20	613508,159941	1.66	1.69	1.69	0.01	0.23%	1.26%	No	No
T8_30	613511,159931	1.65	1.67	1.68	0.01	0.19%	1.09%	No	No
T8_40	613515,159922	1.64	1.67	1.67	0.01	0.17%	1.00%	No	No
T8_50	613518,159912	1.64	1.66	1.67	0.00	0.15%	0.94%	No	No
T8_60	613521,159903	1.63	1.66	1.66	0.00	0.14%	0.91%	No	No
T8_70	613524,159894	1.63	1.66	1.66	0.00	0.13%	0.88%	No	No
T8_80	613528,159884	1.63	1.65	1.66	0.00	0.13%	0.86%	No	No
T8_90	613531,159875	1.63	1.65	1.66	0.00	0.12%	0.85%	No	No
T8_100	613534,159865	1.63	1.65	1.66	0.00	0.12%	0.83%	No	No
T8_110	613537,159856	1.63	1.65	1.65	0.00	0.12%	0.83%	No	No
T8_120	613541,159846	1.63	1.65	1.65	0.00	0.12%	0.82%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T8_130	613544,159837	1.63	1.65	1.65	0.00	0.11%	0.81%	No	No
T8_140	613547,159827	1.63	1.65	1.65	0.00	0.11%	0.81%	No	No
T8_150	613550,159818	1.63	1.65	1.65	0.00	0.11%	0.81%	No	No
T8_160	613554,159808	1.63	1.65	1.65	0.00	0.11%	0.81%	No	No
T8_170	613557,159799	1.63	1.65	1.65	0.00	0.11%	0.81%	No	No
T8_180	613560,159790	1.63	1.65	1.65	0.00	0.10%	0.81%	No	No
T12_0	613885,159884	1.68	1.72	1.72	0.00	0.09%	1.39%	No	No
T12_10	613875,159886	1.66	1.69	1.70	0.00	0.09%	1.17%	No	No
T12_20	613866,159889	1.65	1.68	1.68	0.00	0.09%	1.07%	No	No
T12_30	613856,159891	1.65	1.67	1.68	0.00	0.09%	1.01%	No	No
T12_40	613846,159894	1.64	1.67	1.67	0.00	0.10%	0.98%	No	No
T12_50	613836,159896	1.64	1.67	1.67	0.00	0.10%	0.95%	No	No
T12_60	613827,159898	1.64	1.67	1.67	0.00	0.10%	0.93%	No	No
T12_70	613817,159901	1.64	1.66	1.67	0.00	0.10%	0.92%	No	No
T13_0	613859,159743	1.74	1.80	1.80	0.00	0.07%	2.11%	No	No
T13_10	613852,159750	1.69	1.74	1.74	0.00	0.07%	1.54%	No	No
T13_20	613846,159758	1.67	1.71	1.71	0.00	0.07%	1.29%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T13_30	613839,159766	1.66	1.69	1.69	0.00	0.07%	1.16%	No	No
T13_40	613833,159773	1.65	1.68	1.69	0.00	0.08%	1.07%	No	No
T13_50	613826,159781	1.65	1.68	1.68	0.00	0.08%	1.01%	No	No
T13_60	613820,159788	1.65	1.67	1.67	0.00	0.08%	0.97%	No	No
T13_70	613813,159796	1.64	1.67	1.67	0.00	0.08%	0.94%	No	No
T13_80	613807,159804	1.64	1.67	1.67	0.00	0.08%	0.92%	No	No
T13_90	613800,159811	1.64	1.66	1.67	0.00	0.08%	0.90%	No	No
T14_0	613912,159611	1.71	1.76	1.76	0.00	0.07%	1.71%	No	No
T14_10	613921,159609	1.68	1.71	1.71	0.00	0.07%	1.32%	No	No
T14_20	613931,159607	1.66	1.69	1.69	0.00	0.07%	1.14%	No	No
T14_30	613941,159604	1.65	1.68	1.68	0.00	0.07%	1.04%	No	No
T14_40	613950,159602	1.65	1.67	1.68	0.00	0.07%	0.97%	No	No
T14_50	613960,159599	1.64	1.67	1.67	0.00	0.07%	0.93%	No	No
T14_60	613970,159597	1.64	1.66	1.67	0.00	0.07%	0.90%	No	No
T14_70	613980,159595	1.64	1.66	1.66	0.00	0.07%	0.87%	No	No
T14_80	613989,159592	1.64	1.66	1.66	0.00	0.07%	0.85%	No	No
T14_90	613999,159590	1.63	1.66	1.66	0.00	0.07%	0.83%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T14_100	614009,159588	1.63	1.66	1.66	0.00	0.07%	0.82%	No	No
T14_110	614018,159585	1.63	1.66	1.66	0.00	0.07%	0.81%	No	No
T15_0	614315,160248	1.49	1.63	1.70	0.07	2.28%	6.91%	No	No
T15_10	614306,160244	1.29	1.35	1.38	0.03	0.89%	2.94%	No	No
T15_20	614297,160240	1.24	1.28	1.30	0.02	0.54%	1.97%	No	No
T15_30	614288,160236	1.22	1.25	1.27	0.01	0.39%	1.55%	No	No
T15_40	614279,160232	1.21	1.24	1.25	0.01	0.30%	1.33%	No	No
T15_50	614270,160228	1.20	1.23	1.24	0.01	0.25%	1.19%	No	No
T15_60	614260,160224	1.19	1.22	1.23	0.01	0.21%	1.09%	No	No
T15_70	614251,160219	1.19	1.22	1.22	0.01	0.19%	1.02%	No	No
T15_80	614242,160215	1.19	1.21	1.22	0.01	0.17%	0.97%	No	No
T15_90	614233,160211	1.19	1.21	1.21	0.00	0.16%	0.93%	No	No
T15_100	614224,160207	1.18	1.21	1.21	0.00	0.14%	0.90%	No	No
T15_110	614215,160203	1.18	1.21	1.21	0.00	0.13%	0.87%	No	No
T15_120	614206,160199	1.18	1.20	1.21	0.00	0.13%	0.85%	No	No
T15_130	614197,160194	1.18	1.20	1.21	0.00	0.12%	0.83%	No	No
T15_140	614188,160190	1.18	1.20	1.20	0.00	0.11%	0.81%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T18_0	614110,161381	1.48	1.61	1.62	0.00	0.07%	4.60%	No	No
T18_10	614100,161383	1.27	1.33	1.33	0.00	0.07%	1.92%	No	No
T18_20	614090,161385	1.22	1.26	1.26	0.00	0.07%	1.29%	No	No
T18_30	614080,161387	1.20	1.23	1.23	0.00	0.07%	1.03%	No	No
T18_40	614070,161388	1.19	1.21	1.22	0.00	0.07%	0.88%	No	No
T18_50	614060,161390	1.18	1.20	1.21	0.00	0.07%	0.79%	No	No
T18_60	614051,161392	1.18	1.20	1.20	0.00	0.07%	0.73%	No	No
T18_70	614041,161394	1.17	1.19	1.19	0.00	0.07%	0.69%	No	No
T18_80	614031,161396	1.17	1.19	1.19	0.00	0.07%	0.66%	No	No
T18_90	614021,161397	1.17	1.19	1.19	0.00	0.07%	0.64%	No	No
T18_100	614011,161399	1.17	1.18	1.19	0.00	0.07%	0.62%	No	No
T18_110	614001,161401	1.17	1.18	1.18	0.00	0.08%	0.60%	No	No
T18_120	613992,161403	1.16	1.18	1.18	0.00	0.08%	0.59%	No	No
T18_130	613982,161405	1.16	1.18	1.18	0.00	0.08%	0.58%	No	No
T18_140	613972,161406	1.16	1.18	1.18	0.00	0.08%	0.57%	No	No
T18_150	613962,161408	1.16	1.18	1.18	0.00	0.08%	0.56%	No	No
T18_160	613952,161410	1.16	1.18	1.18	0.00	0.08%	0.55%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T18_170	613942,161412	1.16	1.18	1.18	0.00	0.08%	0.55%	No	No
T18_180	613933,161414	1.16	1.17	1.18	0.00	0.08%	0.54%	No	No
T18_190	613923,161415	1.16	1.17	1.18	0.00	0.08%	0.54%	No	No
T18_200	613913,161417	1.16	1.17	1.18	0.00	0.08%	0.54%	No	No
T20_0	614136,161424	1.68	1.89	1.89	0.00	0.06%	7.02%	No	No
T20_10	614145,161423	1.32	1.40	1.40	0.00	0.06%	2.49%	No	No
T20_20	614155,161421	1.25	1.30	1.30	0.00	0.06%	1.61%	No	No
T20_30	614165,161420	1.22	1.26	1.26	0.00	0.06%	1.24%	No	No
T20_40	614175,161419	1.20	1.23	1.24	0.00	0.06%	1.05%	No	No
T20_50	614185,161418	1.19	1.22	1.22	0.00	0.06%	0.93%	No	No
T20_60	614195,161417	1.19	1.21	1.21	0.00	0.06%	0.84%	No	No
T20_70	614205,161416	1.18	1.20	1.21	0.00	0.06%	0.78%	No	No
T20_80	614215,161415	1.18	1.20	1.20	0.00	0.06%	0.74%	No	No
T20_90	614225,161414	1.18	1.20	1.20	0.00	0.05%	0.70%	No	No
T20_100	614235,161413	1.17	1.19	1.19	0.00	0.05%	0.68%	No	No
T20_110	614245,161412	1.17	1.19	1.19	0.00	0.05%	0.65%	No	No
T20_120	614255,161411	1.17	1.19	1.19	0.00	0.05%	0.63%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T20_130	614265,161410	1.17	1.19	1.19	0.00	0.05%	0.62%	No	No
T20_140	614275,161409	1.17	1.18	1.19	0.00	0.05%	0.60%	No	No
T20_150	614285,161408	1.17	1.18	1.18	0.00	0.05%	0.59%	No	No
T20_160	614295,161407	1.17	1.18	1.18	0.00	0.05%	0.58%	No	No
T20_170	614305,161406	1.17	1.18	1.18	0.00	0.05%	0.57%	No	No
T20_180	614315,161405	1.16	1.18	1.18	0.00	0.05%	0.56%	No	No
T20_190	614324,161404	1.16	1.18	1.18	0.00	0.05%	0.55%	No	No
T20_200	614334,161403	1.16	1.18	1.18	0.00	0.05%	0.54%	No	No
T19_0	614109,161317	1.70	1.91	1.91	0.00	0.07%	7.21%	No	No
T19_10	614118,161315	1.33	1.41	1.41	0.00	0.07%	2.61%	No	No
T19_20	614128,161314	1.26	1.30	1.31	0.00	0.07%	1.68%	No	No
T19_30	614138,161313	1.22	1.26	1.26	0.00	0.07%	1.30%	No	No
T19_40	614148,161312	1.21	1.24	1.24	0.00	0.07%	1.09%	No	No
T19_50	614158,161310	1.20	1.22	1.23	0.00	0.07%	0.97%	No	No
T19_60	614168,161309	1.19	1.21	1.22	0.00	0.07%	0.88%	No	No
T19_70	614178,161308	1.18	1.21	1.21	0.00	0.07%	0.81%	No	No
T19_80	614188,161306	1.18	1.20	1.20	0.00	0.06%	0.77%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T19_90	614198,161305	1.18	1.20	1.20	0.00	0.06%	0.73%	No	No
T19_100	614208,161304	1.17	1.19	1.20	0.00	0.06%	0.70%	No	No
T19_110	614218,161303	1.17	1.19	1.19	0.00	0.06%	0.67%	No	No
T19_120	614228,161301	1.17	1.19	1.19	0.00	0.06%	0.65%	No	No
T19_130	614237,161300	1.17	1.19	1.19	0.00	0.06%	0.64%	No	No
T19_140	614247,161299	1.17	1.19	1.19	0.00	0.06%	0.62%	No	No
T19_150	614257,161298	1.17	1.18	1.19	0.00	0.06%	0.61%	No	No
T19_160	614267,161296	1.17	1.18	1.18	0.00	0.06%	0.59%	No	No
T19_170	614277,161295	1.17	1.18	1.18	0.00	0.06%	0.58%	No	No
T19_180	614287,161294	1.17	1.18	1.18	0.00	0.06%	0.57%	No	No
T19_190	614297,161292	1.16	1.18	1.18	0.00	0.06%	0.57%	No	No
T19_200	614307,161291	1.16	1.18	1.18	0.00	0.05%	0.56%	No	No
T7_0	613452,159956	1.92	2.04	2.08	0.04	1.22%	5.45%	No	No
T7_10	613455,159965	1.73	1.79	1.81	0.02	0.53%	2.47%	No	No
T7_20	613458,159975	1.69	1.73	1.74	0.01	0.36%	1.76%	No	No
T7_30	613462,159984	1.67	1.70	1.71	0.01	0.29%	1.45%	No	No
T7_40	613465,159994	1.66	1.69	1.70	0.01	0.24%	1.28%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T7_50	613468,160003	1.65	1.68	1.69	0.01	0.22%	1.17%	No	No
T7_60	613471,160013	1.65	1.67	1.68	0.01	0.20%	1.10%	No	No
T7_70	613474,160022	1.64	1.67	1.67	0.01	0.19%	1.04%	No	No
T23_0	612412,158396	1.82	1.92	1.97	0.05	1.72%	4.82%	No	No
T23_10	612403,158394	1.72	1.77	1.80	0.03	0.84%	2.65%	No	No
T23_20	612393,158392	1.69	1.73	1.74	0.02	0.54%	1.92%	No	No
T23_30	612383,158390	1.67	1.70	1.71	0.01	0.39%	1.56%	No	No
T23_40	612373,158388	1.66	1.69	1.70	0.01	0.31%	1.36%	No	No
T23_50	612364,158385	1.65	1.68	1.69	0.01	0.26%	1.22%	No	No
T23_60	612354,158383	1.65	1.67	1.68	0.01	0.22%	1.13%	No	No
T23_70	612344,158381	1.64	1.67	1.68	0.01	0.19%	1.06%	No	No
T23_80	612334,158379	1.64	1.67	1.67	0.01	0.17%	1.01%	No	No
T23_90	612324,158377	1.64	1.66	1.67	0.00	0.15%	0.96%	No	No
T23_100	612315,158375	1.64	1.66	1.66	0.00	0.14%	0.93%	No	No
T23_110	612305,158372	1.64	1.66	1.66	0.00	0.13%	0.90%	No	No
T23_120	612295,158370	1.63	1.66	1.66	0.00	0.12%	0.87%	No	No
T23_130	612285,158368	1.63	1.65	1.66	0.00	0.11%	0.85%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T22_0	612421,158558	1.90	2.03	2.10	0.07	2.31%	6.48%	No	No
T22_10	612411,158560	1.74	1.81	1.84	0.03	1.04%	3.16%	No	No
T22_20	612401,158561	1.70	1.74	1.76	0.02	0.65%	2.17%	No	No
T22_30	612391,158562	1.67	1.71	1.73	0.01	0.47%	1.71%	No	No
T22_40	612381,158564	1.66	1.69	1.70	0.01	0.36%	1.44%	No	No
T22_50	612371,158565	1.65	1.68	1.69	0.01	0.29%	1.27%	No	No
T22_60	612361,158567	1.65	1.67	1.68	0.01	0.25%	1.15%	No	No
T22_70	612352,158568	1.64	1.67	1.67	0.01	0.21%	1.06%	No	No
T22_80	612342,158569	1.64	1.66	1.67	0.01	0.19%	1.00%	No	No
T22_90	612332,158571	1.64	1.66	1.66	0.00	0.16%	0.94%	No	No
T22_100	612322,158572	1.63	1.66	1.66	0.00	0.15%	0.90%	No	No
T22_110	612312,158574	1.63	1.65	1.66	0.00	0.13%	0.86%	No	No
T22_120	612302,158575	1.63	1.65	1.66	0.00	0.12%	0.83%	No	No
T22_130	612292,158576	1.63	1.65	1.65	0.00	0.11%	0.81%	No	No
T22_140	612282,158578	1.63	1.65	1.65	0.00	0.10%	0.79%	No	No
T21_0	612435,158690	2.00	2.17	2.26	0.09	3.13%	8.63%	No	No
T21_10	612425,158693	1.76	1.83	1.86	0.03	1.16%	3.48%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T21_20	612415,158695	1.70	1.75	1.77	0.02	0.68%	2.24%	No	No
T21_30	612406,158698	1.67	1.71	1.73	0.01	0.48%	1.72%	No	No
T21_40	612396,158700	1.66	1.69	1.70	0.01	0.36%	1.43%	No	No
T21_50	612386,158703	1.65	1.68	1.69	0.01	0.29%	1.25%	No	No
T21_60	612377,158706	1.64	1.67	1.68	0.01	0.24%	1.13%	No	No
T21_70	612367,158708	1.64	1.67	1.67	0.01	0.21%	1.04%	No	No
T21_80	612357,158711	1.64	1.66	1.67	0.01	0.18%	0.97%	No	No
T21_90	612348,158713	1.63	1.66	1.66	0.00	0.16%	0.92%	No	No
T21_100	612338,158716	1.63	1.65	1.66	0.00	0.14%	0.88%	No	No
T21_110	612328,158718	1.63	1.65	1.66	0.00	0.13%	0.84%	No	No
T21_120	612319,158721	1.63	1.65	1.65	0.00	0.12%	0.81%	No	No
T21_130	612309,158723	1.63	1.65	1.65	0.00	0.11%	0.79%	No	No
T21_140	612299,158726	1.63	1.65	1.65	0.00	0.10%	0.77%	No	No
T21_150	612290,158729	1.63	1.65	1.65	0.00	0.09%	0.75%	No	No
T21_160	612280,158731	1.62	1.64	1.65	0.00	0.09%	0.73%	No	No
T21_170	612270,158734	1.62	1.64	1.65	0.00	0.08%	0.72%	No	No
T11_0	613751,160001	1.44	1.55	1.59	0.03	1.11%	5.00%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations (µg/m^3)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (µg/m^3)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T11_10	613753,160011	1.26	1.31	1.33	0.01	0.45%	2.15%	No	No
T11_20	613756,160021	1.22	1.26	1.26	0.01	0.29%	1.48%	No	No
T11_30	613759,160030	1.20	1.23	1.24	0.01	0.22%	1.19%	No	No
T11_40	613761,160040	1.19	1.22	1.22	0.01	0.19%	1.04%	No	No
T11_50	613764,160050	1.19	1.21	1.21	0.00	0.16%	0.94%	No	No
T11_60	613767,160059	1.18	1.20	1.21	0.00	0.15%	0.87%	No	No
T11_70	613769,160069	1.18	1.20	1.20	0.00	0.14%	0.83%	No	No
T11_80	613772,160078	1.18	1.20	1.20	0.00	0.13%	0.79%	No	No
T11_90	613775,160088	1.17	1.19	1.20	0.00	0.12%	0.76%	No	No
T11_100	613777,160098	1.17	1.19	1.20	0.00	0.12%	0.73%	No	No
T11_110	613780,160107	1.17	1.19	1.19	0.00	0.11%	0.71%	No	No
T17_0	614085,161192	1.41	1.52	1.52	0.00	0.09%	3.73%	No	No
T17_10	614075,161194	1.26	1.32	1.32	0.00	0.09%	1.84%	No	No
T17_20	614065,161196	1.22	1.26	1.26	0.00	0.09%	1.30%	No	No
T17_30	614055,161198	1.20	1.23	1.23	0.00	0.10%	1.06%	No	No
T17_40	614045,161200	1.19	1.22	1.22	0.00	0.10%	0.93%	No	No
T17_50	614036,161202	1.18	1.21	1.21	0.00	0.10%	0.84%	No	No

Receptor ID	Receptor Location	Annual Mean NH_3 Concentrations ($\mu g/m^3$)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change ($\mu g/m^3$)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T17_60	614026,161204	1.18	1.20	1.20	0.00	0.10%	0.78%	No	No
T17_70	614016,161206	1.18	1.19	1.20	0.00	0.10%	0.74%	No	No
T17_80	614006,161208	1.17	1.19	1.19	0.00	0.10%	0.71%	No	No
T17_90	613996,161210	1.17	1.19	1.19	0.00	0.11%	0.69%	No	No
T17_100	613987,161212	1.17	1.19	1.19	0.00	0.11%	0.67%	No	No
T17_110	613977,161214	1.17	1.18	1.19	0.00	0.11%	0.66%	No	No
T17_120	613967,161215	1.17	1.18	1.19	0.00	0.11%	0.64%	No	No
T17_130	613957,161217	1.17	1.18	1.18	0.00	0.11%	0.63%	No	No
T17_140	613947,161219	1.16	1.18	1.18	0.00	0.12%	0.63%	No	No
T17_150	613938,161221	1.16	1.18	1.18	0.00	0.12%	0.62%	No	No
T17_160	613928,161223	1.16	1.18	1.18	0.00	0.12%	0.61%	No	No
T17_170	613918,161225	1.16	1.18	1.18	0.00	0.12%	0.61%	No	No
T17_180	613908,161227	1.16	1.18	1.18	0.00	0.12%	0.60%	No	No
T17_190	613898,161229	1.16	1.18	1.18	0.00	0.12%	0.60%	No	No

N DEPOSITION

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T1_0	611758,161210	25.70	22.56	22.63	0.07	0.49%	-20.47%	No	No
T1_10	611751,161203	25.58	22.46	22.53	0.06	0.43%	-20.33%	No	No
T1_20	611744,161197	25.47	22.39	22.45	0.06	0.37%	-20.17%	No	No
T1_30	611737,161190	25.40	22.34	22.39	0.05	0.34%	-20.06%	No	No
T1_40	611729,161183	25.34	22.30	22.34	0.04	0.29%	-20.03%	No	No
T1_50	611722,161176	25.29	22.26	22.30	0.04	0.27%	-19.96%	No	No
T1_60	611715,161169	25.25	22.23	22.27	0.04	0.25%	-19.86%	No	No
T1_70	611708,161162	25.22	22.21	22.24	0.04	0.24%	-19.84%	No	No
T1_80	611700,161155	25.18	22.19	22.22	0.03	0.21%	-19.72%	No	No
T1_90	611693,161148	25.15	22.17	22.20	0.03	0.20%	-19.69%	No	No
T1_100	611686,161141	25.14	22.16	22.18	0.03	0.17%	-19.75%	No	No
T1_110	611679,161134	25.12	22.14	22.17	0.03	0.19%	-19.68%	No	No
T1_120	611672,161127	25.10	22.13	22.15	0.02	0.16%	-19.62%	No	No
T1_130	611664,161120	25.09	22.12	22.14	0.02	0.15%	-19.66%	No	No
T1_140	611657,161113	25.07	22.11	22.13	0.03	0.17%	-19.60%	No	No
T1_150	611650,161107	25.05	22.10	22.12	0.02	0.15%	-19.52%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T1_160	611643,161100	25.05	22.09	22.12	0.02	0.15%	-19.55%	No	No
T1_170	611636,161093	25.04	22.09	22.11	0.02	0.14%	-19.57%	No	No
T1_180	611628,161086	25.03	22.08	22.10	0.02	0.13%	-19.51%	No	No
T1_190	611621,161079	25.02	22.07	22.09	0.02	0.13%	-19.54%	No	No
T1_200	611614,161072	25.02	22.07	22.09	0.02	0.11%	-19.57%	No	No
T2_0	611903,161061	25.63	22.51	22.58	0.07	0.47%	-20.34%	No	No
T2_10	611896,161054	25.52	22.43	22.49	0.06	0.42%	-20.23%	No	No
T2_20	611889,161047	25.44	22.37	22.42	0.05	0.37%	-20.13%	No	No
T2_30	611881,161040	25.37	22.33	22.37	0.05	0.33%	-19.98%	No	No
T2_40	611874,161033	25.32	22.29	22.33	0.04	0.29%	-19.93%	No	No
T2_50	611867,161026	25.29	22.26	22.30	0.04	0.29%	-19.94%	No	No
T2_60	611860,161019	25.25	22.23	22.27	0.04	0.26%	-19.83%	No	No
T2_70	611853,161012	25.22	22.21	22.25	0.04	0.25%	-19.81%	No	No
T2_80	611845,161005	25.19	22.19	22.23	0.04	0.23%	-19.79%	No	No
T2_90	611838,160998	25.17	22.17	22.21	0.03	0.23%	-19.74%	No	No
T2_100	611831,160991	25.15	22.16	22.19	0.03	0.20%	-19.70%	No	No
T2_110	611824,160984	25.12	22.15	22.18	0.03	0.20%	-19.64%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T2_120	611817,160977	25.12	22.14	22.16	0.03	0.19%	-19.69%	No	No
T2_130	611810,160971	25.10	22.13	22.15	0.03	0.19%	-19.61%	No	No
T2_140	611802,160964	25.09	22.12	22.14	0.02	0.17%	-19.65%	No	No
T2_150	611795,160957	25.07	22.11	22.13	0.02	0.16%	-19.59%	No	No
T2_160	611788,160950	25.07	22.10	22.12	0.02	0.15%	-19.63%	No	No
T2_170	611781,160943	25.05	22.09	22.12	0.02	0.15%	-19.54%	No	No
T2_180	611774,160936	25.04	22.09	22.11	0.02	0.17%	-19.55%	No	No
T2_190	611766,160929	25.04	22.08	22.11	0.02	0.15%	-19.58%	No	No
T2_200	611759,160922	25.03	22.08	22.10	0.02	0.14%	-19.51%	No	No
T3_0	612490,160110	25.36	22.31	22.38	0.06	0.41%	-19.88%	No	No
T3_10	612483,160104	25.33	22.29	22.35	0.06	0.39%	-19.89%	No	No
T3_20	612475,160098	25.29	22.26	22.32	0.05	0.35%	-19.80%	No	No
T3_30	612467,160092	25.26	22.24	22.30	0.05	0.34%	-19.76%	No	No
T3_40	612459,160086	25.24	22.23	22.28	0.05	0.33%	-19.73%	No	No
T3_50	612451,160079	25.21	22.21	22.26	0.05	0.33%	-19.68%	No	No
T3_60	612443,160073	25.21	22.20	22.24	0.05	0.31%	-19.74%	No	No
T3_70	612436,160067	25.19	22.19	22.23	0.04	0.29%	-19.71%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T3_80	612428,160061	25.16	22.18	22.22	0.04	0.29%	-19.63%	No	No
T3_90	612420,160055	25.16	22.17	22.21	0.04	0.26%	-19.68%	No	No
T3_100	612412,160048	25.14	22.16	22.20	0.04	0.25%	-19.61%	No	No
T3_110	612404,160042	25.13	22.15	22.19	0.04	0.25%	-19.63%	No	No
T3_120	612396,160036	25.12	22.14	22.18	0.04	0.24%	-19.57%	No	No
T3_130	612388,160030	25.11	22.14	22.17	0.04	0.24%	-19.60%	No	No
T3_140	612381,160024	25.11	22.13	22.16	0.04	0.23%	-19.63%	No	No
T3_150	612373,160017	25.09	22.12	22.16	0.03	0.23%	-19.55%	No	No
T3_160	612365,160011	25.09	22.12	22.15	0.03	0.23%	-19.56%	No	No
T3_170	612357,160005	25.08	22.11	22.15	0.03	0.23%	-19.58%	No	No
T3_180	612349,159999	25.07	22.11	22.14	0.03	0.21%	-19.52%	No	No
T3_190	612341,159993	25.07	22.11	22.14	0.03	0.21%	-19.53%	No	No
T3_200	612334,159986	25.06	22.10	22.13	0.03	0.21%	-19.55%	No	No
T4_0	613114,160304	25.12	22.15	24.58	2.44	24.35%	-5.38%	Yes	No
T4_10	613124,160303	25.12	22.15	23.10	0.95	9.53%	-20.20%	Yes	No
T4_20	613134,160303	25.12	22.15	22.74	0.59	5.93%	-23.80%	Yes	No
T4_30	613144,160303	25.12	22.15	22.58	0.43	4.31%	-25.42%	Yes	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T4_40	613154,160302	25.12	22.15	22.49	0.34	3.39%	-26.34%	Yes	No
T4_50	613164,160302	25.12	22.15	22.43	0.28	2.83%	-26.91%	Yes	No
T4_60	613174,160302	25.12	22.15	22.39	0.24	2.43%	-27.31%	Yes	No
T4_70	613184,160302	25.12	22.15	22.36	0.21	2.13%	-27.61%	Yes	No
T4_80	613194,160301	25.12	22.15	22.34	0.19	1.91%	-27.83%	Yes	No
T4_90	613204,160301	25.12	22.15	22.32	0.17	1.73%	-28.01%	Yes	No
T4_100	613214,160301	25.12	22.15	22.30	0.16	1.57%	-28.17%	Yes	No
T4_110	613224,160300	25.12	22.15	22.29	0.15	1.46%	-28.28%	Yes	No
T4_120	613234,160300	25.12	22.15	22.28	0.14	1.36%	-28.38%	Yes	No
T4_130	613244,160300	25.12	22.15	22.27	0.13	1.27%	-28.46%	Yes	No
T4_140	613254,160299	25.12	22.15	22.27	0.12	1.19%	-28.54%	Yes	No
T4_150	613264,160299	25.12	22.15	22.26	0.11	1.14%	-28.59%	Yes	No
T4_160	613274,160299	25.12	22.15	22.25	0.11	1.08%	-28.65%	Yes	No
T4_170	613284,160299	25.12	22.15	22.25	0.10	1.04%	-28.69%	Yes	No
T4_180	613294,160298	25.12	22.15	22.25	0.10	0.99%	-28.74%	No	No
T4_190	613304,160298	25.12	22.15	22.24	0.10	0.95%	-28.78%	No	No
T4_200	613314,160298	25.12	22.15	22.24	0.09	0.93%	-28.80%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T5_0	613105,160304	25.12	22.15	24.53	2.39	23.85%	-5.88%	Yes	No
T5_10	613095,160305	25.12	22.15	23.10	0.95	9.54%	-20.19%	Yes	No
T5_20	613085,160305	25.12	22.15	22.74	0.59	5.92%	-23.80%	Yes	No
T5_30	613075,160306	25.12	22.15	22.58	0.43	4.31%	-25.42%	Yes	No
T5_40	613065,160306	25.12	22.15	22.49	0.34	3.37%	-26.35%	Yes	No
T5_50	613055,160307	25.12	22.15	22.43	0.27	2.75%	-26.95%	Yes	No
T5_60	613045,160307	25.12	22.15	22.39	0.23	2.34%	-27.35%	Yes	No
T5_70	613035,160308	25.12	22.15	22.36	0.20	2.04%	-27.65%	Yes	No
T5_80	613025,160308	25.14	22.15	22.34	0.18	1.82%	-28.02%	Yes	No
T6_0	612983,160256	25.17	22.18	22.32	0.15	1.45%	-28.46%	Yes	No
T6_10	612973,160259	25.17	22.18	22.31	0.13	1.31%	-28.56%	Yes	No
T6_20	612964,160263	25.17	22.18	22.30	0.12	1.21%	-28.66%	Yes	No
T6_30	612954,160266	25.17	22.18	22.30	0.12	1.17%	-28.71%	Yes	No
T6_40	612945,160269	25.17	22.18	22.29	0.11	1.10%	-28.77%	Yes	No
T6_50	612936,160273	25.17	22.18	22.29	0.10	1.03%	-28.84%	Yes	No
T16_0	613705,161028	15.41	13.46	14.44	0.98	4.89%	-4.83%	No	No
T16_10	613708,161038	14.78	12.97	13.34	0.37	1.84%	-7.20%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T16_20	613711,161047	14.63	12.85	13.08	0.23	1.13%	-7.74%	No	No
T16_30	613714,161057	14.56	12.80	12.97	0.16	0.81%	-7.98%	No	No
T16_40	613717,161066	14.52	12.78	12.90	0.13	0.64%	-8.07%	No	No
T16_50	613720,161076	14.50	12.76	12.86	0.11	0.53%	-8.17%	No	No
T16_60	613723,161085	14.48	12.75	12.84	0.09	0.45%	-8.22%	No	No
T16_70	613726,161095	14.47	12.74	12.82	0.08	0.40%	-8.25%	No	No
T16_80	613729,161105	14.46	12.73	12.80	0.07	0.35%	-8.27%	No	No
T16_90	613732,161114	14.45	12.73	12.79	0.06	0.32%	-8.31%	No	No
T16_100	613735,161124	14.44	12.72	12.78	0.06	0.30%	-8.29%	No	No
T10_0	613635,160025	28.57	24.85	25.12	0.26	2.62%	-34.54%	Yes	No
T10_10	613635,160035	26.82	23.44	23.59	0.15	1.45%	-32.36%	Yes	No
T10_20	613635,160045	26.22	22.98	23.09	0.11	1.06%	-31.33%	Yes	No
T10_30	613635,160055	25.93	22.75	22.84	0.09	0.90%	-30.89%	No	No
T10_40	613635,160065	25.75	22.61	22.69	0.08	0.79%	-30.56%	No	No
T10_50	613635,160075	25.64	22.53	22.60	0.07	0.71%	-30.43%	No	No
T10_60	613634,160085	25.56	22.46	22.53	0.07	0.65%	-30.32%	No	No
T10_70	613634,160095	25.49	22.42	22.48	0.06	0.62%	-30.12%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T10_80	613634,160105	25.44	22.38	22.44	0.06	0.61%	-30.00%	No	No
T10_90	613634,160115	25.41	22.35	22.41	0.06	0.56%	-30.01%	No	No
T10_100	613634,160125	25.36	22.33	22.38	0.05	0.55%	-29.84%	No	No
T10_110	613634,160135	25.34	22.31	22.36	0.05	0.54%	-29.80%	No	No
T10_120	613634,160145	25.31	22.29	22.34	0.05	0.53%	-29.73%	No	No
T10_130	613633,160155	25.29	22.27	22.33	0.05	0.53%	-29.67%	No	No
T10_140	613633,160165	25.29	22.26	22.31	0.05	0.49%	-29.76%	No	No
T10_150	613633,160175	25.26	22.25	22.30	0.05	0.52%	-29.64%	No	No
T10_160	613633,160185	25.26	22.24	22.29	0.05	0.51%	-29.69%	No	No
T10_170	613633,160195	25.24	22.23	22.28	0.05	0.51%	-29.59%	No	No
T10_180	613633,160205	25.24	22.22	22.27	0.05	0.50%	-29.64%	No	No
T10_190	613633,160215	25.21	22.21	22.26	0.05	0.50%	-29.51%	No	No
T10_200	613632,160225	25.21	22.21	22.26	0.05	0.48%	-29.55%	No	No
T9_0	613615,160013	29.46	25.59	25.91	0.32	3.18%	-35.53%	Yes	No
T9_10	613617,160003	26.80	23.42	23.56	0.14	1.42%	-32.36%	Yes	No
T9_20	613618,159993	26.18	22.92	23.03	0.10	1.02%	-31.53%	Yes	No
T9_30	613620,159983	25.90	22.71	22.79	0.08	0.83%	-31.04%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T9_40	613621,159973	25.74	22.59	22.66	0.07	0.73%	-30.81%	No	No
T9_50	613623,159964	25.64	22.52	22.58	0.07	0.66%	-30.62%	No	No
T9_60	613624,159954	25.57	22.46	22.53	0.06	0.63%	-30.43%	No	No
T9_70	613626,159944	25.52	22.43	22.49	0.06	0.60%	-30.32%	No	No
T9_80	613627,159934	25.49	22.40	22.46	0.06	0.56%	-30.35%	No	No
T9_90	613628,159924	25.45	22.38	22.44	0.06	0.57%	-30.14%	No	No
T9_100	613630,159914	25.43	22.37	22.42	0.05	0.52%	-30.08%	No	No
T9_110	613631,159904	25.42	22.35	22.40	0.05	0.52%	-30.16%	No	No
T8_0	613501,159960	32.31	28.21	28.44	0.23	2.31%	-38.76%	Yes	No
T8_10	613505,159950	30.77	26.96	27.09	0.13	1.29%	-36.80%	Yes	No
T8_20	613508,159941	30.29	26.58	26.68	0.10	0.97%	-36.12%	No	No
T8_30	613511,159931	30.06	26.41	26.49	0.08	0.81%	-35.74%	No	No
T8_40	613515,159922	29.94	26.31	26.38	0.07	0.75%	-35.52%	No	No
T8_50	613518,159912	29.84	26.25	26.32	0.07	0.68%	-35.27%	No	No
T8_60	613521,159903	29.79	26.21	26.27	0.06	0.63%	-35.20%	No	No
T8_70	613524,159894	29.74	26.18	26.24	0.06	0.61%	-35.07%	No	No
T8_80	613528,159884	29.72	26.16	26.21	0.06	0.57%	-35.04%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T8_90	613531,159875	29.70	26.14	26.20	0.06	0.56%	-34.99%	No	No
T8_100	613534,159865	29.69	26.13	26.18	0.06	0.57%	-35.05%	No	No
T8_110	613537,159856	29.67	26.12	26.17	0.05	0.54%	-34.96%	No	No
T8_120	613541,159846	29.67	26.11	26.16	0.05	0.50%	-35.01%	No	No
T8_130	613544,159837	29.65	26.11	26.16	0.05	0.52%	-34.87%	No	No
T8_140	613547,159827	29.65	26.11	26.16	0.05	0.49%	-34.91%	No	No
T8_150	613550,159818	29.65	26.10	26.16	0.05	0.51%	-34.92%	No	No
T8_160	613554,159808	29.65	26.10	26.16	0.05	0.51%	-34.92%	No	No
T8_170	613557,159799	29.65	26.11	26.16	0.05	0.50%	-34.93%	No	No
T8_180	613560,159790	29.65	26.11	26.16	0.05	0.50%	-34.92%	No	No
T12_0	613885,159884	30.68	26.92	26.97	0.04	0.43%	-37.17%	No	No
T12_10	613875,159886	30.35	26.65	26.69	0.04	0.40%	-36.60%	No	No
T12_20	613866,159889	30.18	26.51	26.55	0.04	0.41%	-36.28%	No	No
T12_30	613856,159891	30.08	26.43	26.47	0.04	0.42%	-36.03%	No	No
T12_40	613846,159894	30.02	26.38	26.42	0.04	0.44%	-35.96%	No	No
T12_50	613836,159896	29.97	26.34	26.39	0.05	0.45%	-35.82%	No	No
T12_60	613827,159898	29.92	26.31	26.36	0.05	0.48%	-35.61%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T12_70	613817,159901	29.90	26.29	26.34	0.05	0.46%	-35.59%	No	No
T13_0	613859,159743	31.83	27.86	27.90	0.04	0.35%	-39.35%	No	No
T13_10	613852,159750	30.97	27.15	27.18	0.04	0.36%	-37.88%	No	No
T13_20	613846,159758	30.57	26.82	26.86	0.04	0.36%	-37.08%	No	No
T13_30	613839,159766	30.35	26.65	26.68	0.04	0.36%	-36.67%	No	No
T13_40	613833,159773	30.19	26.53	26.56	0.04	0.36%	-36.29%	No	No
T13_50	613826,159781	30.11	26.45	26.49	0.04	0.37%	-36.21%	No	No
T13_60	613820,159788	30.03	26.39	26.43	0.04	0.36%	-36.00%	No	No
T13_70	613813,159796	29.96	26.35	26.38	0.04	0.37%	-35.73%	No	No
T13_80	613807,159804	29.92	26.31	26.35	0.04	0.38%	-35.74%	No	No
T13_90	613800,159811	29.88	26.28	26.32	0.04	0.37%	-35.57%	No	No
T14_0	613912,159611	31.40	27.44	27.48	0.04	0.35%	-39.22%	No	No
T14_10	613921,159609	30.70	26.90	26.94	0.03	0.31%	-37.69%	No	No
T14_20	613931,159607	30.38	26.66	26.69	0.03	0.31%	-36.91%	No	No
T14_30	613941,159604	30.19	26.51	26.54	0.03	0.31%	-36.50%	No	No
T14_40	613950,159602	30.07	26.42	26.45	0.03	0.31%	-36.21%	No	No
T14_50	613960,159599	29.97	26.35	26.38	0.03	0.34%	-35.90%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T14_60	613970,159597	29.92	26.30	26.33	0.03	0.31%	-35.84%	No	No
T14_70	613980,159595	29.85	26.26	26.30	0.03	0.34%	-35.56%	No	No
T14_80	613989,159592	29.82	26.23	26.26	0.03	0.30%	-35.56%	No	No
T14_90	613999,159590	29.78	26.21	26.24	0.03	0.31%	-35.37%	No	No
T14_100	614009,159588	29.75	26.19	26.22	0.03	0.30%	-35.33%	No	No
T14_110	614018,159585	29.73	26.17	26.20	0.03	0.31%	-35.27%	No	No
T15_0	614315,160248	31.09	27.22	27.98	0.76	7.61%	-31.17%	Yes	No
T15_10	614306,160244	27.73	24.26	24.58	0.32	3.20%	-31.50%	Yes	No
T15_20	614297,160240	26.83	23.49	23.70	0.21	2.05%	-31.34%	Yes	No
T15_30	614288,160236	26.41	23.15	23.30	0.15	1.51%	-31.13%	Yes	No
T15_40	614279,160232	26.17	22.96	23.08	0.12	1.23%	-30.89%	Yes	No
T15_50	614270,160228	26.02	22.83	22.94	0.10	1.04%	-30.86%	Yes	No
T15_60	614260,160224	25.92	22.75	22.84	0.09	0.89%	-30.80%	No	No
T15_70	614251,160219	25.84	22.69	22.77	0.08	0.79%	-30.70%	No	No
T15_80	614242,160215	25.77	22.64	22.71	0.07	0.74%	-30.53%	No	No
T15_90	614233,160211	25.73	22.60	22.67	0.07	0.70%	-30.57%	No	No
T15_100	614224,160207	25.68	22.57	22.64	0.06	0.64%	-30.46%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T15_110	614215,160203	25.66	22.55	22.61	0.06	0.58%	-30.47%	No	No
T15_120	614206,160199	25.63	22.53	22.59	0.06	0.56%	-30.42%	No	No
T15_130	614197,160194	25.61	22.51	22.57	0.05	0.54%	-30.39%	No	No
T15_140	614188,160190	25.58	22.50	22.55	0.05	0.53%	-30.31%	No	No
T18_0	614110,161381	30.99	27.10	27.13	0.03	0.28%	-38.56%	No	No
T18_10	614100,161383	27.42	24.00	24.03	0.03	0.28%	-33.93%	No	No
T18_20	614090,161385	26.47	23.21	23.24	0.03	0.30%	-32.33%	No	No
T18_30	614080,161387	26.04	22.85	22.88	0.03	0.31%	-31.53%	No	No
T18_40	614070,161388	25.78	22.65	22.69	0.03	0.31%	-30.90%	No	No
T18_50	614060,161390	25.62	22.53	22.56	0.03	0.32%	-30.55%	No	No
T18_60	614051,161392	25.51	22.44	22.47	0.03	0.32%	-30.34%	No	No
T18_70	614041,161394	25.43	22.38	22.41	0.03	0.29%	-30.20%	No	No
T18_80	614031,161396	25.36	22.33	22.36	0.03	0.32%	-29.93%	No	No
T18_90	614021,161397	25.32	22.29	22.33	0.03	0.33%	-29.94%	No	No
T18_100	614011,161399	25.27	22.26	22.30	0.03	0.33%	-29.76%	No	No
T18_110	614001,161401	25.25	22.24	22.27	0.03	0.32%	-29.76%	No	No
T18_120	613992,161403	25.21	22.22	22.25	0.03	0.33%	-29.53%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T18_130	613982,161405	25.18	22.20	22.23	0.03	0.33%	-29.44%	No	No
T18_140	613972,161406	25.17	22.19	22.22	0.03	0.34%	-29.52%	No	No
T18_150	613962,161408	25.15	22.17	22.20	0.03	0.33%	-29.46%	No	No
T18_160	613952,161410	25.13	22.16	22.19	0.03	0.34%	-29.33%	No	No
T18_170	613942,161412	25.12	22.15	22.18	0.03	0.34%	-29.38%	No	No
T18_180	613933,161414	25.10	22.14	22.18	0.04	0.35%	-29.25%	No	No
T18_190	613923,161415	25.10	22.13	22.17	0.04	0.35%	-29.29%	No	No
T18_200	613913,161417	25.08	22.13	22.16	0.03	0.34%	-29.19%	No	No
T20_0	614136,161424	34.31	30.00	30.03	0.03	0.26%	-42.78%	No	No
T20_10	614145,161423	28.25	24.70	24.73	0.03	0.26%	-35.22%	No	No
T20_20	614155,161421	26.93	23.60	23.63	0.02	0.25%	-33.06%	No	No
T20_30	614165,161420	26.35	23.13	23.15	0.03	0.26%	-31.97%	No	No
T20_40	614175,161419	26.02	22.87	22.89	0.03	0.26%	-31.29%	No	No
T20_50	614185,161418	25.83	22.70	22.73	0.03	0.25%	-30.98%	No	No
T20_60	614195,161417	25.69	22.59	22.62	0.02	0.25%	-30.70%	No	No
T20_70	614205,161416	25.58	22.51	22.54	0.02	0.25%	-30.45%	No	No
T20_80	614215,161415	25.50	22.45	22.47	0.02	0.24%	-30.32%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T20_90	614225,161414	25.43	22.40	22.42	0.02	0.24%	-30.07%	No	No
T20_100	614235,161413	25.38	22.36	22.38	0.03	0.25%	-29.94%	No	No
T20_110	614245,161412	25.34	22.33	22.35	0.02	0.24%	-29.92%	No	No
T20_120	614255,161411	25.30	22.30	22.32	0.02	0.24%	-29.74%	No	No
T20_130	614265,161410	25.27	22.27	22.30	0.02	0.24%	-29.73%	No	No
T20_140	614275,161409	25.24	22.25	22.28	0.02	0.23%	-29.65%	No	No
T20_150	614285,161408	25.22	22.24	22.26	0.02	0.23%	-29.60%	No	No
T20_160	614295,161407	25.21	22.22	22.25	0.02	0.23%	-29.65%	No	No
T20_170	614305,161406	25.19	22.21	22.23	0.02	0.23%	-29.57%	No	No
T20_180	614315,161405	25.17	22.20	22.22	0.02	0.23%	-29.48%	No	No
T20_190	614324,161404	25.16	22.19	22.21	0.02	0.22%	-29.53%	No	No
T20_200	614334,161403	25.14	22.18	22.20	0.02	0.20%	-29.43%	No	No
T19_0	614109,161317	34.52	30.20	30.23	0.03	0.32%	-42.82%	No	No
T19_10	614118,161315	28.38	24.82	24.85	0.03	0.29%	-35.31%	No	No
T19_20	614128,161314	27.02	23.67	23.70	0.03	0.29%	-33.15%	No	No
T19_30	614138,161313	26.43	23.18	23.21	0.03	0.31%	-32.14%	No	No
T19_40	614148,161312	26.10	22.91	22.94	0.03	0.30%	-31.52%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T19_50	614158,161310	25.88	22.74	22.77	0.03	0.27%	-31.08%	No	No
T19_60	614168,161309	25.72	22.62	22.65	0.03	0.28%	-30.70%	No	No
T19_70	614178,161308	25.61	22.54	22.57	0.03	0.30%	-30.46%	No	No
T19_80	614188,161306	25.53	22.47	22.50	0.03	0.27%	-30.30%	No	No
T19_90	614198,161305	25.47	22.42	22.45	0.03	0.27%	-30.22%	No	No
T19_100	614208,161304	25.42	22.38	22.41	0.03	0.27%	-30.10%	No	No
T19_110	614218,161303	25.37	22.35	22.37	0.03	0.26%	-29.97%	No	No
T19_120	614228,161301	25.32	22.32	22.34	0.03	0.26%	-29.80%	No	No
T19_130	614237,161300	25.29	22.29	22.32	0.03	0.28%	-29.73%	No	No
T19_140	614247,161299	25.27	22.27	22.30	0.03	0.26%	-29.71%	No	No
T19_150	614257,161298	25.24	22.25	22.28	0.03	0.28%	-29.60%	No	No
T19_160	614267,161296	25.22	22.24	22.26	0.02	0.25%	-29.55%	No	No
T19_170	614277,161295	25.21	22.22	22.25	0.03	0.25%	-29.64%	No	No
T19_180	614287,161294	25.19	22.21	22.24	0.02	0.24%	-29.52%	No	No
T19_190	614297,161292	25.18	22.20	22.23	0.02	0.24%	-29.57%	No	No
T19_200	614307,161291	25.16	22.19	22.21	0.02	0.24%	-29.51%	No	No
T7_0	613452,159956	35.17	30.54	30.97	0.43	4.27%	-41.96%	Yes	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T7_10	613455,159965	31.75	27.75	27.95	0.20	1.98%	-38.03%	Yes	No
T7_20	613458,159975	30.89	27.06	27.20	0.14	1.42%	-36.94%	Yes	No
T7_30	613462,159984	30.48	26.75	26.86	0.11	1.15%	-36.19%	Yes	No
T7_40	613465,159994	30.26	26.57	26.67	0.10	1.01%	-35.92%	Yes	No
T7_50	613468,160003	30.11	26.46	26.55	0.09	0.94%	-35.61%	No	No
T7_60	613471,160013	30.01	26.38	26.46	0.08	0.84%	-35.47%	No	No
T7_70	613474,160022	29.93	26.32	26.40	0.08	0.78%	-35.35%	No	No
T23_0	612412,158396	33.41	29.18	29.79	0.61	6.07%	-36.17%	Yes	No
T23_10	612403,158394	31.55	27.62	27.93	0.31	3.14%	-36.23%	Yes	No
T23_20	612393,158392	30.87	27.06	27.27	0.21	2.11%	-35.97%	Yes	No
T23_30	612383,158390	30.52	26.78	26.94	0.16	1.60%	-35.79%	Yes	No
T23_40	612373,158388	30.30	26.61	26.74	0.13	1.29%	-35.65%	Yes	No
T23_50	612364,158385	30.17	26.49	26.60	0.11	1.09%	-35.63%	Yes	No
T23_60	612354,158383	30.06	26.42	26.51	0.09	0.93%	-35.53%	No	No
T23_70	612344,158381	29.97	26.35	26.44	0.09	0.85%	-35.29%	No	No
T23_80	612334,158379	29.91	26.30	26.38	0.08	0.77%	-35.29%	No	No
T23_90	612324,158377	29.86	26.27	26.34	0.07	0.69%	-35.24%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T23_100	612315,158375	29.81	26.23	26.29	0.06	0.63%	-35.16%	No	No
T23_110	612305,158372	29.78	26.20	26.26	0.06	0.60%	-35.19%	No	No
T23_120	612295,158370	29.74	26.18	26.24	0.05	0.54%	-35.03%	No	No
T23_130	612285,158368	29.71	26.16	26.21	0.05	0.52%	-35.01%	No	No
T22_0	612421,158558	34.80	30.41	31.21	0.80	8.00%	-35.94%	Yes	No
T22_10	612411,158560	32.02	28.01	28.39	0.38	3.84%	-36.24%	Yes	No
T22_20	612401,158561	31.11	27.25	27.50	0.25	2.52%	-36.05%	Yes	No
T22_30	612391,158562	30.64	26.88	27.06	0.19	1.85%	-35.81%	Yes	No
T22_40	612381,158564	30.37	26.66	26.81	0.15	1.48%	-35.68%	Yes	No
T22_50	612371,158565	30.19	26.51	26.64	0.13	1.25%	-35.50%	Yes	No
T22_60	612361,158567	30.04	26.41	26.51	0.10	1.03%	-35.27%	Yes	No
T22_70	612352,158568	29.95	26.33	26.43	0.09	0.91%	-35.28%	No	No
T22_80	612342,158569	29.88	26.27	26.35	0.08	0.82%	-35.23%	No	No
T22_90	612332,158571	29.80	26.23	26.30	0.07	0.73%	-35.05%	No	No
T22_100	612322,158572	29.75	26.18	26.25	0.07	0.68%	-35.01%	No	No
T22_110	612312,158574	29.70	26.15	26.21	0.06	0.62%	-34.90%	No	No
T22_120	612302,158575	29.68	26.12	26.18	0.06	0.58%	-34.95%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T22_130	612292,158576	29.63	26.10	26.15	0.05	0.53%	-34.79%	No	No
T22_140	612282,158578	29.60	26.08	26.13	0.05	0.50%	-34.78%	No	No
T21_0	612435,158690	36.48	31.90	32.95	1.05	10.54%	-35.28%	Yes	No
T21_10	612425,158693	32.29	28.24	28.66	0.43	4.27%	-36.29%	Yes	No
T21_20	612415,158695	31.16	27.30	27.56	0.26	2.62%	-36.02%	Yes	No
T21_30	612406,158698	30.64	26.88	27.07	0.19	1.89%	-35.77%	Yes	No
T21_40	612396,158700	30.35	26.64	26.79	0.15	1.51%	-35.57%	Yes	No
T21_50	612386,158703	30.14	26.49	26.61	0.12	1.21%	-35.32%	Yes	No
T21_60	612377,158706	30.01	26.38	26.49	0.10	1.02%	-35.25%	Yes	No
T21_70	612367,158708	29.91	26.31	26.40	0.09	0.90%	-35.11%	No	No
T21_80	612357,158711	29.83	26.24	26.32	0.08	0.80%	-35.07%	No	No
T21_90	612348,158713	29.76	26.20	26.27	0.07	0.72%	-34.89%	No	No
T21_100	612338,158716	29.71	26.16	26.22	0.07	0.67%	-34.84%	No	No
T21_110	612328,158718	29.68	26.13	26.19	0.06	0.60%	-34.90%	No	No
T21_120	612319,158721	29.63	26.10	26.15	0.05	0.54%	-34.78%	No	No
T21_130	612309,158723	29.60	26.07	26.13	0.05	0.52%	-34.76%	No	No
T21_140	612299,158726	29.58	26.06	26.10	0.05	0.47%	-34.73%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T21_150	612290,158729	29.55	26.04	26.08	0.05	0.45%	-34.70%	No	No
T21_160	612280,158731	29.53	26.02	26.06	0.04	0.43%	-34.63%	No	No
T21_170	612270,158734	29.51	26.01	26.05	0.04	0.41%	-34.59%	No	No
T11_0	613751,160001	30.54	26.48	26.87	0.39	3.86%	-36.69%	Yes	No
T11_10	613753,160011	27.30	23.82	23.98	0.17	1.67%	-33.14%	Yes	No
T11_20	613756,160021	26.47	23.16	23.27	0.11	1.14%	-31.97%	Yes	No
T11_30	613759,160030	26.09	22.87	22.96	0.09	0.91%	-31.23%	No	No
T11_40	613761,160040	25.88	22.71	22.79	0.08	0.77%	-30.87%	No	No
T11_50	613764,160050	25.74	22.61	22.68	0.07	0.68%	-30.69%	No	No
T11_60	613767,160059	25.64	22.53	22.60	0.06	0.64%	-30.46%	No	No
T11_70	613769,160069	25.59	22.48	22.54	0.06	0.61%	-30.44%	No	No
T11_80	613772,160078	25.52	22.44	22.50	0.05	0.55%	-30.20%	No	No
T11_90	613775,160088	25.49	22.41	22.46	0.05	0.55%	-30.25%	No	No
T11_100	613777,160098	25.44	22.38	22.43	0.05	0.53%	-30.08%	No	No
T11_110	613780,160107	25.41	22.36	22.41	0.05	0.49%	-30.05%	No	No
T17_0	614085,161192	29.88	26.09	26.13	0.04	0.37%	-37.51%	No	No
T17_10	614075,161194	27.27	23.86	23.90	0.04	0.40%	-33.73%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T17_20	614065,161196	26.45	23.19	23.23	0.04	0.41%	-32.21%	No	No
T17_30	614055,161198	26.06	22.87	22.91	0.04	0.41%	-31.54%	No	No
T17_40	614045,161200	25.82	22.68	22.72	0.04	0.41%	-30.98%	No	No
T17_50	614036,161202	25.66	22.56	22.60	0.04	0.42%	-30.59%	No	No
T17_60	614026,161204	25.56	22.47	22.52	0.04	0.43%	-30.38%	No	No
T17_70	614016,161206	25.48	22.41	22.46	0.05	0.46%	-30.20%	No	No
T17_80	614006,161208	25.42	22.36	22.41	0.05	0.46%	-30.11%	No	No
T17_90	613996,161210	25.37	22.33	22.37	0.05	0.47%	-29.94%	No	No
T17_100	613987,161212	25.32	22.30	22.34	0.04	0.44%	-29.79%	No	No
T17_110	613977,161214	25.29	22.27	22.32	0.05	0.48%	-29.74%	No	No
T17_120	613967,161215	25.27	22.25	22.30	0.05	0.46%	-29.69%	No	No
T17_130	613957,161217	25.24	22.23	22.28	0.05	0.46%	-29.63%	No	No
T17_140	613947,161219	25.22	22.22	22.27	0.05	0.50%	-29.51%	No	No
T17_150	613938,161221	25.20	22.20	22.25	0.05	0.50%	-29.45%	No	No
T17_160	613928,161223	25.17	22.19	22.24	0.05	0.50%	-29.32%	No	No
T17_170	613918,161225	25.17	22.18	22.23	0.05	0.51%	-29.36%	No	No
T17_180	613908,161227	25.15	22.17	22.22	0.05	0.51%	-29.26%	No	No

Receptor ID	Receptor Location	Nitrogen Deposition (kgN/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (kgN/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T17_190	613898,161229	25.15	22.17	22.22	0.05	0.51%	-29.30%	No	No

ACID DEPOSITON

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T1_0	611758,161210	1.89	1.66	1.66	0.01	0.2%	-7.9%	No	No
T1_10	611751,161203	1.88	1.65	1.65	0.00	0.2%	-7.8%	No	No
T1_20	611744,161197	1.87	1.64	1.65	0.00	0.1%	-7.8%	No	No
T1_30	611737,161190	1.86	1.64	1.64	0.00	0.1%	-7.7%	No	No
T1_40	611729,161183	1.86	1.64	1.64	0.00	0.1%	-7.7%	No	No
T1_50	611722,161176	1.86	1.63	1.64	0.00	0.1%	-7.7%	No	No
T1_60	611715,161169	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T1_70	611708,161162	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T1_80	611700,161155	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T1_90	611693,161148	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T1_100	611686,161141	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T1_110	611679,161134	1.84	1.63	1.63	0.00	0.1%	-7.6%	No	No
T1_120	611672,161127	1.84	1.62	1.63	0.00	0.1%	-7.6%	No	No
T1_130	611664,161120	1.84	1.62	1.63	0.00	0.1%	-7.6%	No	No
T1_140	611657,161113	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No
T1_150	611650,161107	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No
T1_160	611643,161100	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No
T1_170	611636,161093	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No
T1_180	611628,161086	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No
T1_190	611621,161079	1.84	1.62	1.62	0.00	0.0%	-7.5%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T1_200	611614,161072	1.84	1.62	1.62	0.00	0.0%	-7.5%	No	No
T2_0	611903,161061	1.88	1.65	1.66	0.01	0.2%	-7.8%	No	No
T2_10	611896,161054	1.87	1.65	1.65	0.00	0.2%	-7.8%	No	No
T2_20	611889,161047	1.87	1.64	1.65	0.00	0.1%	-7.7%	No	No
T2_30	611881,161040	1.86	1.64	1.64	0.00	0.1%	-7.7%	No	No
T2_40	611874,161033	1.86	1.64	1.64	0.00	0.1%	-7.7%	No	No
T2_50	611867,161026	1.86	1.63	1.64	0.00	0.1%	-7.7%	No	No
T2_60	611860,161019	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T2_70	611853,161012	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T2_80	611845,161005	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T2_90	611838,160998	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T2_100	611831,160991	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T2_110	611824,160984	1.84	1.63	1.63	0.00	0.1%	-7.6%	No	No
T2_120	611817,160977	1.84	1.62	1.63	0.00	0.1%	-7.6%	No	No
T2_130	611810,160971	1.84	1.62	1.63	0.00	0.1%	-7.5%	No	No
T2_140	611802,160964	1.84	1.62	1.63	0.00	0.1%	-7.6%	No	No
T2_150	611795,160957	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No
T2_160	611788,160950	1.84	1.62	1.62	0.00	0.1%	-7.6%	No	No
T2_170	611781,160943	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No
T2_180	611774,160936	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No
T2_190	611766,160929	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T2_200	611759,160922	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No
T3_0	612490,160110	1.86	1.64	1.64	0.00	0.2%	-7.6%	No	No
T3_10	612483,160104	1.86	1.64	1.64	0.00	0.1%	-7.7%	No	No
T3_20	612475,160098	1.86	1.63	1.64	0.00	0.1%	-7.6%	No	No
T3_30	612467,160092	1.85	1.63	1.64	0.00	0.1%	-7.6%	No	No
T3_40	612459,160086	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T3_50	612451,160079	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T3_60	612443,160073	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T3_70	612436,160067	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T3_80	612428,160061	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T3_90	612420,160055	1.85	1.63	1.63	0.00	0.1%	-7.6%	No	No
T3_100	612412,160048	1.84	1.63	1.63	0.00	0.1%	-7.5%	No	No
T3_110	612404,160042	1.84	1.63	1.63	0.00	0.1%	-7.6%	No	No
T3_120	612396,160036	1.84	1.63	1.63	0.00	0.1%	-7.5%	No	No
T3_130	612388,160030	1.84	1.62	1.63	0.00	0.1%	-7.5%	No	No
T3_140	612381,160024	1.84	1.62	1.63	0.00	0.1%	-7.6%	No	No
T3_150	612373,160017	1.84	1.62	1.63	0.00	0.1%	-7.5%	No	No
T3_160	612365,160011	1.84	1.62	1.63	0.00	0.1%	-7.5%	No	No
T3_170	612357,160005	1.84	1.62	1.63	0.00	0.1%	-7.5%	No	No
T3_180	612349,159999	1.84	1.62	1.63	0.00	0.1%	-7.5%	No	No
T3_190	612341,159993	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T3_200	612334,159986	1.84	1.62	1.62	0.00	0.1%	-7.5%	No	No
T4_0	613114,160304	1.84	1.63	1.80	0.17	7.7%	-1.9%	No	No
T4_10	613124,160303	1.84	1.63	1.69	0.07	3.0%	-6.6%	No	No
T4_20	613134,160303	1.84	1.63	1.67	0.04	1.9%	-7.8%	No	No
T4_30	613144,160303	1.84	1.63	1.66	0.03	1.4%	-8.3%	No	No
T4_40	613154,160302	1.84	1.63	1.65	0.02	1.1%	-8.6%	No	No
T4_50	613164,160302	1.84	1.63	1.65	0.02	0.9%	-8.7%	No	No
T4_60	613174,160302	1.84	1.63	1.64	0.02	0.8%	-8.9%	No	No
T4_70	613184,160302	1.84	1.63	1.64	0.02	0.7%	-9.0%	No	No
T4_80	613194,160301	1.84	1.63	1.64	0.01	0.6%	-9.0%	No	No
T4_90	613204,160301	1.84	1.63	1.64	0.01	0.5%	-9.1%	No	No
T4_100	613214,160301	1.84	1.63	1.64	0.01	0.5%	-9.1%	No	No
T4_110	613224,160300	1.84	1.63	1.64	0.01	0.5%	-9.2%	No	No
T4_120	613234,160300	1.84	1.63	1.64	0.01	0.4%	-9.2%	No	No
T4_130	613244,160300	1.84	1.63	1.63	0.01	0.4%	-9.2%	No	No
T4_140	613254,160299	1.84	1.63	1.63	0.01	0.4%	-9.3%	No	No
T4_150	613264,160299	1.84	1.63	1.63	0.01	0.4%	-9.3%	No	No
T4_160	613274,160299	1.84	1.63	1.63	0.01	0.3%	-9.3%	No	No
T4_170	613284,160299	1.84	1.63	1.63	0.01	0.3%	-9.3%	No	No
T4_180	613294,160298	1.84	1.63	1.63	0.01	0.3%	-9.3%	No	No
T4_190	613304,160298	1.84	1.63	1.63	0.01	0.3%	-9.3%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T4_200	613314,160298	1.84	1.63	1.63	0.01	0.3%	-9.3%	No	No
T5_0	613105,160304	1.84	1.63	1.80	0.17	7.5%	-2.1%	No	No
T5_10	613095,160305	1.84	1.63	1.69	0.07	3.0%	-6.6%	No	No
T5_20	613085,160305	1.84	1.63	1.67	0.04	1.9%	-7.8%	No	No
T5_30	613075,160306	1.84	1.63	1.66	0.03	1.4%	-8.3%	No	No
T5_40	613065,160306	1.84	1.63	1.65	0.02	1.1%	-8.6%	No	No
T5_50	613055,160307	1.84	1.63	1.65	0.02	0.9%	-8.8%	No	No
T5_60	613045,160307	1.84	1.63	1.64	0.02	0.7%	-8.9%	No	No
T5_70	613035,160308	1.84	1.63	1.64	0.01	0.6%	-9.0%	No	No
T5_80	613025,160308	1.85	1.63	1.64	0.01	0.6%	-9.1%	No	No
T6_0	612983,160256	1.85	1.63	1.64	0.01	0.5%	-9.2%	No	No
T6_10	612973,160259	1.85	1.63	1.64	0.01	0.4%	-9.3%	No	No
T6_20	612964,160263	1.85	1.63	1.64	0.01	0.4%	-9.3%	No	No
T6_30	612954,160266	1.85	1.63	1.64	0.01	0.4%	-9.3%	No	No
T6_40	612945,160269	1.85	1.63	1.64	0.01	0.3%	-9.3%	No	No
T6_50	612936,160273	1.85	1.63	1.64	0.01	0.3%	-9.4%	No	No
T16_0	613705,161028	1.13	0.99	1.06	0.07	1.4%	-1.4%	No	No
T16_10	613708,161038	1.09	0.95	0.98	0.03	0.5%	-2.1%	No	No
T16_20	613711,161047	1.07	0.94	0.96	0.02	0.3%	-2.2%	No	No
T16_30	613714,161057	1.07	0.94	0.95	0.01	0.2%	-2.3%	No	No
T16_40	613717,161066	1.07	0.94	0.95	0.01	0.2%	-2.3%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T16_50	613720,161076	1.07	0.94	0.95	0.01	0.1%	-2.4%	No	No
T16_60	613723,161085	1.06	0.94	0.94	0.01	0.1%	-2.4%	No	No
T16_70	613726,161095	1.06	0.94	0.94	0.01	0.1%	-2.4%	No	No
T16_80	613729,161105	1.06	0.94	0.94	0.01	0.1%	-2.4%	No	No
T16_90	613732,161114	1.06	0.94	0.94	0.00	0.1%	-2.4%	No	No
T16_100	613735,161124	1.06	0.93	0.94	0.00	0.1%	-2.4%	No	No
T10_0	613635,160025	2.09	1.82	1.84	0.02	0.8%	-11.2%	No	No
T10_10	613635,160035	1.97	1.72	1.73	0.01	0.5%	-10.5%	No	No
T10_20	613635,160045	1.92	1.69	1.69	0.01	0.3%	-10.1%	No	No
T10_30	613635,160055	1.90	1.67	1.68	0.01	0.3%	-10.0%	No	No
T10_40	613635,160065	1.89	1.66	1.66	0.01	0.3%	-9.9%	No	No
T10_50	613635,160075	1.88	1.65	1.66	0.01	0.2%	-9.9%	No	No
T10_60	613634,160085	1.88	1.65	1.65	0.00	0.2%	-9.8%	No	No
T10_70	613634,160095	1.87	1.64	1.65	0.00	0.2%	-9.8%	No	No
T10_80	613634,160105	1.87	1.64	1.65	0.00	0.2%	-9.7%	No	No
T10_90	613634,160115	1.86	1.64	1.64	0.00	0.2%	-9.7%	No	No
T10_100	613634,160125	1.86	1.64	1.64	0.00	0.2%	-9.7%	No	No
T10_110	613634,160135	1.86	1.64	1.64	0.00	0.2%	-9.7%	No	No
T10_120	613634,160145	1.86	1.64	1.64	0.00	0.2%	-9.6%	No	No
T10_130	613633,160155	1.86	1.63	1.64	0.00	0.2%	-9.6%	No	No
T10_140	613633,160165	1.86	1.63	1.64	0.00	0.2%	-9.6%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T10_150	613633,160175	1.85	1.63	1.64	0.00	0.2%	-9.6%	No	No
T10_160	613633,160185	1.85	1.63	1.64	0.00	0.2%	-9.6%	No	No
T10_170	613633,160195	1.85	1.63	1.64	0.00	0.2%	-9.6%	No	No
T10_180	613633,160205	1.85	1.63	1.63	0.00	0.2%	-9.6%	No	No
T10_190	613633,160215	1.85	1.63	1.63	0.00	0.2%	-9.6%	No	No
T10_200	613632,160225	1.85	1.63	1.63	0.00	0.2%	-9.6%	No	No
T9_0	613615,160013	2.15	1.87	1.89	0.02	1.0%	-11.5%	No	No
T9_10	613617,160003	1.96	1.72	1.73	0.01	0.4%	-10.5%	No	No
T9_20	613618,159993	1.92	1.68	1.69	0.01	0.3%	-10.2%	No	No
T9_30	613620,159983	1.90	1.67	1.67	0.01	0.3%	-10.0%	No	No
T9_40	613621,159973	1.89	1.66	1.66	0.01	0.2%	-10.0%	No	No
T9_50	613623,159964	1.88	1.65	1.66	0.00	0.2%	-9.9%	No	No
T9_60	613624,159954	1.88	1.65	1.65	0.00	0.2%	-9.9%	No	No
T9_70	613626,159944	1.87	1.65	1.65	0.00	0.2%	-9.8%	No	No
T9_80	613627,159934	1.87	1.64	1.65	0.00	0.2%	-9.8%	No	No
T9_90	613628,159924	1.87	1.64	1.65	0.00	0.2%	-9.8%	No	No
T9_100	613630,159914	1.87	1.64	1.65	0.00	0.2%	-9.7%	No	No
T9_110	613631,159904	1.87	1.64	1.64	0.00	0.2%	-9.8%	No	No
T8_0	613501,159960	2.37	2.07	2.08	0.02	0.7%	-12.5%	No	No
T8_10	613505,159950	2.26	1.98	1.99	0.01	0.4%	-11.9%	No	No
T8_20	613508,159941	2.22	1.95	1.96	0.01	0.3%	-11.7%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T8_30	613511,159931	2.21	1.94	1.94	0.01	0.3%	-11.6%	No	No
T8_40	613515,159922	2.20	1.93	1.94	0.01	0.2%	-11.5%	No	No
T8_50	613518,159912	2.19	1.93	1.93	0.00	0.2%	-11.4%	No	No
T8_60	613521,159903	2.19	1.92	1.93	0.00	0.2%	-11.4%	No	No
T8_70	613524,159894	2.18	1.92	1.93	0.00	0.2%	-11.4%	No	No
T8_80	613528,159884	2.18	1.92	1.92	0.00	0.2%	-11.4%	No	No
T8_90	613531,159875	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T8_100	613534,159865	2.18	1.92	1.92	0.00	0.2%	-11.4%	No	No
T8_110	613537,159856	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T8_120	613541,159846	2.18	1.92	1.92	0.00	0.2%	-11.4%	No	No
T8_130	613544,159837	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T8_140	613547,159827	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T8_150	613550,159818	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T8_160	613554,159808	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T8_170	613557,159799	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T8_180	613560,159790	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T12_0	613885,159884	2.25	1.98	1.98	0.00	0.1%	-12.0%	No	No
T12_10	613875,159886	2.23	1.96	1.96	0.00	0.1%	-11.9%	No	No
T12_20	613866,159889	2.22	1.95	1.95	0.00	0.1%	-11.8%	No	No
T12_30	613856,159891	2.21	1.94	1.94	0.00	0.1%	-11.7%	No	No
T12_40	613846,159894	2.20	1.94	1.94	0.00	0.1%	-11.7%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T12_50	613836,159896	2.20	1.93	1.94	0.00	0.1%	-11.6%	No	No
T12_60	613827,159898	2.20	1.93	1.94	0.00	0.2%	-11.5%	No	No
T12_70	613817,159901	2.19	1.93	1.93	0.00	0.1%	-11.5%	No	No
T13_0	613859,159743	2.33	2.04	2.05	0.00	0.1%	-12.7%	No	No
T13_10	613852,159750	2.27	1.99	1.99	0.00	0.1%	-12.3%	No	No
T13_20	613846,159758	2.24	1.97	1.97	0.00	0.1%	-12.0%	No	No
T13_30	613839,159766	2.23	1.96	1.96	0.00	0.1%	-11.9%	No	No
T13_40	613833,159773	2.22	1.95	1.95	0.00	0.1%	-11.8%	No	No
T13_50	613826,159781	2.21	1.94	1.94	0.00	0.1%	-11.7%	No	No
T13_60	613820,159788	2.20	1.94	1.94	0.00	0.1%	-11.7%	No	No
T13_70	613813,159796	2.20	1.93	1.94	0.00	0.1%	-11.6%	No	No
T13_80	613807,159804	2.20	1.93	1.93	0.00	0.1%	-11.6%	No	No
T13_90	613800,159811	2.19	1.93	1.93	0.00	0.1%	-11.5%	No	No
T14_0	613912,159611	2.30	2.01	2.02	0.00	0.1%	-12.7%	No	No
T14_10	613921,159609	2.25	1.97	1.98	0.00	0.1%	-12.2%	No	No
T14_20	613931,159607	2.23	1.96	1.96	0.00	0.1%	-12.0%	No	No
T14_30	613941,159604	2.22	1.95	1.95	0.00	0.1%	-11.8%	No	No
T14_40	613950,159602	2.21	1.94	1.94	0.00	0.1%	-11.7%	No	No
T14_50	613960,159599	2.20	1.93	1.94	0.00	0.1%	-11.6%	No	No
T14_60	613970,159597	2.20	1.93	1.93	0.00	0.1%	-11.6%	No	No
T14_70	613980,159595	2.19	1.93	1.93	0.00	0.1%	-11.5%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T14_80	613989,159592	2.19	1.93	1.93	0.00	0.1%	-11.5%	No	No
T14_90	613999,159590	2.19	1.92	1.93	0.00	0.1%	-11.5%	No	No
T14_100	614009,159588	2.18	1.92	1.93	0.00	0.1%	-11.5%	No	No
T14_110	614018,159585	2.18	1.92	1.92	0.00	0.1%	-11.4%	No	No
T15_0	614315,160248	2.27	1.99	2.04	0.05	2.4%	-10.1%	No	No
T15_10	614306,160244	2.03	1.78	1.80	0.02	1.0%	-10.2%	No	No
T15_20	614297,160240	1.97	1.72	1.74	0.01	0.6%	-10.1%	No	No
T15_30	614288,160236	1.94	1.70	1.71	0.01	0.5%	-10.1%	No	No
T15_40	614279,160232	1.92	1.68	1.69	0.01	0.4%	-10.0%	No	No
T15_50	614270,160228	1.91	1.67	1.68	0.01	0.3%	-10.0%	No	No
T15_60	614260,160224	1.90	1.67	1.67	0.01	0.3%	-10.0%	No	No
T15_70	614251,160219	1.89	1.66	1.67	0.01	0.2%	-9.9%	No	No
T15_80	614242,160215	1.89	1.66	1.67	0.01	0.2%	-9.9%	No	No
T15_90	614233,160211	1.89	1.66	1.66	0.00	0.2%	-9.9%	No	No
T15_100	614224,160207	1.88	1.66	1.66	0.00	0.2%	-9.9%	No	No
T15_110	614215,160203	1.88	1.65	1.66	0.00	0.2%	-9.9%	No	No
T15_120	614206,160199	1.88	1.65	1.66	0.00	0.2%	-9.9%	No	No
T15_130	614197,160194	1.88	1.65	1.66	0.00	0.2%	-9.8%	No	No
T15_140	614188,160190	1.88	1.65	1.65	0.00	0.2%	-9.8%	No	No
T18_0	614110,161381	2.26	1.98	1.98	0.00	0.1%	-12.4%	No	No
T18_10	614100,161383	2.01	1.76	1.76	0.00	0.1%	-11.0%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T18_20	614090,161385	1.94	1.70	1.70	0.00	0.1%	-10.5%	No	No
T18_30	614080,161387	1.91	1.68	1.68	0.00	0.1%	-10.2%	No	No
T18_40	614070,161388	1.89	1.66	1.66	0.00	0.1%	-10.0%	No	No
T18_50	614060,161390	1.88	1.65	1.66	0.00	0.1%	-9.9%	No	No
T18_60	614051,161392	1.87	1.65	1.65	0.00	0.1%	-9.8%	No	No
T18_70	614041,161394	1.87	1.64	1.64	0.00	0.1%	-9.8%	No	No
T18_80	614031,161396	1.86	1.64	1.64	0.00	0.1%	-9.7%	No	No
T18_90	614021,161397	1.86	1.64	1.64	0.00	0.1%	-9.7%	No	No
T18_100	614011,161399	1.85	1.63	1.64	0.00	0.1%	-9.6%	No	No
T18_110	614001,161401	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T18_120	613992,161403	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T18_130	613982,161405	1.85	1.63	1.63	0.00	0.1%	-9.5%	No	No
T18_140	613972,161406	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T18_150	613962,161408	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T18_160	613952,161410	1.84	1.63	1.63	0.00	0.1%	-9.5%	No	No
T18_170	613942,161412	1.84	1.63	1.63	0.00	0.1%	-9.5%	No	No
T18_180	613933,161414	1.84	1.63	1.63	0.00	0.1%	-9.5%	No	No
T18_190	613923,161415	1.84	1.62	1.63	0.00	0.1%	-9.5%	No	No
T18_200	613913,161417	1.84	1.62	1.63	0.00	0.1%	-9.5%	No	No
T20_0	614136,161424	2.50	2.19	2.19	0.00	0.1%	-13.8%	No	No
T20_10	614145,161423	2.07	1.81	1.81	0.00	0.1%	-11.4%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T20_20	614155,161421	1.97	1.73	1.73	0.00	0.1%	-10.7%	No	No
T20_30	614165,161420	1.93	1.70	1.70	0.00	0.1%	-10.3%	No	No
T20_40	614175,161419	1.91	1.68	1.68	0.00	0.1%	-10.1%	No	No
T20_50	614185,161418	1.89	1.67	1.67	0.00	0.1%	-10.0%	No	No
T20_60	614195,161417	1.88	1.66	1.66	0.00	0.1%	-9.9%	No	No
T20_70	614205,161416	1.88	1.65	1.65	0.00	0.1%	-9.9%	No	No
T20_80	614215,161415	1.87	1.65	1.65	0.00	0.1%	-9.8%	No	No
T20_90	614225,161414	1.87	1.64	1.65	0.00	0.1%	-9.7%	No	No
T20_100	614235,161413	1.86	1.64	1.64	0.00	0.1%	-9.7%	No	No
T20_110	614245,161412	1.86	1.64	1.64	0.00	0.1%	-9.7%	No	No
T20_120	614255,161411	1.86	1.64	1.64	0.00	0.1%	-9.6%	No	No
T20_130	614265,161410	1.85	1.63	1.64	0.00	0.1%	-9.6%	No	No
T20_140	614275,161409	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T20_150	614285,161408	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T20_160	614295,161407	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T20_170	614305,161406	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T20_180	614315,161405	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T20_190	614324,161404	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T20_200	614334,161403	1.85	1.63	1.63	0.00	0.1%	-9.5%	No	No
T19_0	614109,161317	2.51	2.20	2.20	0.00	0.1%	-13.8%	No	No
T19_10	614118,161315	2.08	1.82	1.82	0.00	0.1%	-11.4%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
		2019 Baseline	2040 Baseline	2040 With Dev	Change (keq/Ha/Yr)	"Alone" % Change Relative to Objective	"In-Combination" % Change Relative to Objective	"Alone" >1% and >CL	"In-Combination" >1% and >CL
T19_20	614128,161314	1.98	1.73	1.74	0.00	0.1%	-10.7%	No	No
T19_30	614138,161313	1.94	1.70	1.70	0.00	0.1%	-10.4%	No	No
T19_40	614148,161312	1.91	1.68	1.68	0.00	0.1%	-10.2%	No	No
T19_50	614158,161310	1.90	1.67	1.67	0.00	0.1%	-10.1%	No	No
T19_60	614168,161309	1.89	1.66	1.66	0.00	0.1%	-9.9%	No	No
T19_70	614178,161308	1.88	1.65	1.66	0.00	0.1%	-9.9%	No	No
T19_80	614188,161306	1.87	1.65	1.65	0.00	0.1%	-9.8%	No	No
T19_90	614198,161305	1.87	1.65	1.65	0.00	0.1%	-9.8%	No	No
T19_100	614208,161304	1.87	1.64	1.64	0.00	0.1%	-9.8%	No	No
T19_110	614218,161303	1.86	1.64	1.64	0.00	0.1%	-9.7%	No	No
T19_120	614228,161301	1.86	1.64	1.64	0.00	0.1%	-9.7%	No	No
T19_130	614237,161300	1.86	1.64	1.64	0.00	0.1%	-9.6%	No	No
T19_140	614247,161299	1.85	1.63	1.64	0.00	0.1%	-9.6%	No	No
T19_150	614257,161298	1.85	1.63	1.64	0.00	0.1%	-9.6%	No	No
T19_160	614267,161296	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T19_170	614277,161295	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T19_180	614287,161294	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T19_190	614297,161292	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T19_200	614307,161291	1.85	1.63	1.63	0.00	0.1%	-9.6%	No	No
T7_0	613452,159956	2.57	2.23	2.26	0.03	1.3%	-13.5%	Yes	No
T7_10	613455,159965	2.33	2.03	2.05	0.01	0.6%	-12.3%	No	No

Receptor ID	Receptor Location	Acid Deposition (keq/Ha/Yr)							
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T7_20	613458,159975	2.27	1.99	2.00	0.01	0.4%	-12.0%	No	No
T7_30	613462,159984	2.24	1.96	1.97	0.01	0.4%	-11.7%	No	No
T7_40	613465,159994	2.22	1.95	1.96	0.01	0.3%	-11.6%	No	No
T7_50	613468,160003	2.21	1.94	1.95	0.01	0.3%	-11.5%	No	No
T7_60	613471,160013	2.20	1.94	1.94	0.01	0.3%	-11.5%	No	No
T7_70	613474,160022	2.20	1.93	1.94	0.01	0.2%	-11.5%	No	No
T23_0	612412,158396	2.45	2.14	2.18	0.04	1.9%	-11.7%	No	No
T23_10	612403,158394	2.31	2.03	2.05	0.02	1.0%	-11.7%	No	No
T23_20	612393,158392	2.26	1.99	2.00	0.02	0.7%	-11.7%	No	No
T23_30	612383,158390	2.24	1.97	1.98	0.01	0.5%	-11.6%	No	No
T23_40	612373,158388	2.22	1.95	1.96	0.01	0.4%	-11.6%	No	No
T23_50	612364,158385	2.21	1.94	1.95	0.01	0.3%	-11.5%	No	No
T23_60	612354,158383	2.21	1.94	1.95	0.01	0.3%	-11.5%	No	No
T23_70	612344,158381	2.20	1.93	1.94	0.01	0.3%	-11.4%	No	No
T23_80	612334,158379	2.20	1.93	1.94	0.01	0.2%	-11.4%	No	No
T23_90	612324,158377	2.19	1.93	1.93	0.00	0.2%	-11.4%	No	No
T23_100	612315,158375	2.19	1.93	1.93	0.00	0.2%	-11.4%	No	No
T23_110	612305,158372	2.19	1.92	1.93	0.00	0.2%	-11.4%	No	No
T23_120	612295,158370	2.18	1.92	1.93	0.00	0.2%	-11.4%	No	No
T23_130	612285,158368	2.18	1.92	1.92	0.00	0.2%	-11.4%	No	No
T22_0	612421,158558	2.55	2.22	2.28	0.06	2.5%	-11.6%	Yes	No

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T22_10	612411,158560	2.35	2.05	2.08	0.03	1.2%	-11.7%	No	No
T22_20	612401,158561	2.28	2.00	2.02	0.02	0.8%	-11.7%	No	No
T22_30	612391,158562	2.25	1.97	1.99	0.01	0.6%	-11.6%	No	No
T22_40	612381,158564	2.23	1.96	1.97	0.01	0.5%	-11.6%	No	No
T22_50	612371,158565	2.22	1.95	1.96	0.01	0.4%	-11.5%	No	No
T22_60	612361,158567	2.21	1.94	1.95	0.01	0.3%	-11.4%	No	No
T22_70	612352,158568	2.20	1.93	1.94	0.01	0.3%	-11.4%	No	No
T22_80	612342,158569	2.19	1.93	1.93	0.01	0.3%	-11.4%	No	No
T22_90	612332,158571	2.19	1.93	1.93	0.01	0.2%	-11.4%	No	No
T22_100	612322,158572	2.18	1.92	1.93	0.00	0.2%	-11.4%	No	No
T22_110	612312,158574	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T22_120	612302,158575	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T22_130	612292,158576	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T22_140	612282,158578	2.17	1.92	1.92	0.00	0.2%	-11.3%	No	No
T21_0	612435,158690	2.67	2.33	2.41	0.08	3.3%	-11.4%	Yes	No
T21_10	612425,158693	2.37	2.07	2.10	0.03	1.3%	-11.8%	No	No
T21_20	612415,158695	2.29	2.00	2.02	0.02	0.8%	-11.7%	No	No
T21_30	612406,158698	2.25	1.97	1.99	0.01	0.6%	-11.6%	No	No
T21_40	612396,158700	2.23	1.96	1.97	0.01	0.5%	-11.5%	No	No
T21_50	612386,158703	2.21	1.94	1.95	0.01	0.4%	-11.5%	No	No
T21_60	612377,158706	2.20	1.94	1.94	0.01	0.3%	-11.4%	No	No

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T21_70	612367,158708	2.20	1.93	1.94	0.01	0.3%	-11.4%	No	No
T21_80	612357,158711	2.19	1.93	1.93	0.01	0.3%	-11.4%	No	No
T21_90	612348,158713	2.18	1.92	1.93	0.01	0.2%	-11.3%	No	No
T21_100	612338,158716	2.18	1.92	1.93	0.00	0.2%	-11.3%	No	No
T21_110	612328,158718	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T21_120	612319,158721	2.18	1.92	1.92	0.00	0.2%	-11.3%	No	No
T21_130	612309,158723	2.17	1.91	1.92	0.00	0.2%	-11.3%	No	No
T21_140	612299,158726	2.17	1.91	1.92	0.00	0.1%	-11.3%	No	No
T21_150	612290,158729	2.17	1.91	1.92	0.00	0.1%	-11.3%	No	No
T21_160	612280,158731	2.17	1.91	1.91	0.00	0.1%	-11.2%	No	No
T21_170	612270,158734	2.17	1.91	1.91	0.00	0.1%	-11.2%	No	No
T11_0	613751,160001	2.23	1.94	1.96	0.03	1.2%	-11.8%	No	No
T11_10	613753,160011	2.00	1.74	1.76	0.01	0.5%	-10.7%	No	No
T11_20	613756,160021	1.94	1.70	1.71	0.01	0.4%	-10.3%	No	No
T11_30	613759,160030	1.91	1.68	1.68	0.01	0.3%	-10.1%	No	No
T11_40	613761,160040	1.90	1.67	1.67	0.01	0.2%	-10.0%	No	No
T11_50	613764,160050	1.89	1.66	1.66	0.00	0.2%	-9.9%	No	No
T11_60	613767,160059	1.88	1.65	1.66	0.00	0.2%	-9.9%	No	No
T11_70	613769,160069	1.88	1.65	1.65	0.00	0.2%	-9.9%	No	No
T11_80	613772,160078	1.87	1.65	1.65	0.00	0.2%	-9.8%	No	No
T11_90	613775,160088	1.87	1.64	1.65	0.00	0.2%	-9.8%	No	No

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T11_100	613777,160098	1.87	1.64	1.65	0.00	0.2%	-9.7%	No	No
T11_110	613780,160107	1.86	1.64	1.64	0.00	0.2%	-9.7%	No	No
T17_0	614085,161192	2.18	1.91	1.91	0.00	0.1%	-12.1%	No	No
T17_10	614075,161194	2.00	1.75	1.75	0.00	0.1%	-10.9%	No	No
T17_20	614065,161196	1.94	1.70	1.70	0.00	0.1%	-10.4%	No	No
T17_30	614055,161198	1.91	1.68	1.68	0.00	0.1%	-10.2%	No	No
T17_40	614045,161200	1.89	1.66	1.67	0.00	0.1%	-10.0%	No	No
T17_50	614036,161202	1.88	1.66	1.66	0.00	0.1%	-9.9%	No	No
T17_60	614026,161204	1.87	1.65	1.65	0.00	0.1%	-9.8%	No	No
T17_70	614016,161206	1.87	1.64	1.65	0.00	0.1%	-9.8%	No	No
T17_80	614006,161208	1.87	1.64	1.64	0.00	0.1%	-9.8%	No	No
T17_90	613996,161210	1.86	1.64	1.64	0.00	0.1%	-9.7%	No	No
T17_100	613987,161212	1.86	1.64	1.64	0.00	0.1%	-9.7%	No	No
T17_110	613977,161214	1.86	1.63	1.64	0.00	0.2%	-9.6%	No	No
T17_120	613967,161215	1.85	1.63	1.64	0.00	0.1%	-9.6%	No	No
T17_130	613957,161217	1.85	1.63	1.64	0.00	0.1%	-9.6%	No	No
T17_140	613947,161219	1.85	1.63	1.63	0.00	0.2%	-9.6%	No	No
T17_150	613938,161221	1.85	1.63	1.63	0.00	0.2%	-9.5%	No	No
T17_160	613928,161223	1.85	1.63	1.63	0.00	0.2%	-9.5%	No	No
T17_170	613918,161225	1.85	1.63	1.63	0.00	0.2%	-9.5%	No	No
T17_180	613908,161227	1.85	1.63	1.63	0.00	0.2%	-9.5%	No	No

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T17_190	613898,161229	1.85	1.63	1.63	0.00	0.2%	-9.5%	No	No

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